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LECTURES BY M. DE BLAINVILLE ON COMPARATIVE OSTEOLOGY.

THE

COMPARATIVE OSTEOGRAPHY

OF THE

SKELETON AND DENTAR SYSTEM

IN THE FIVE CLASSES OF

VERTEBRAL ANIMALS,

RECENT AND FOSSIL.

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WITH GRAPHIC DELINEATIONS BY M. WERNER;

EDITED (FROM THE FRENCH) AND

ADDITIONALLY ILLUSTRATED

WITH NUMEROUS NOTES, OBSERVATIONS, AND DRAWINGS,

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3. *Of the Actual Geographical Distribution of the Primates.*

ANOTHER element, enabling us to solve the great question of the antiquity of the Primates on the earth's surface, is furnished us by the history of the geographical distribution of the species now existing, studied generally, or of certain species in particular.

At present, the Primates are limited to a zone of the earth which does not pass beyond the 35° or 36° of north latitude, in the old continent, and of 23° in the new continent, and of 37° of south latitude in the Old World, and of 27° in the New World.

There exists, then, no species in Europe,* nor in Asia, beyond Japan; nor in North America; nor in South America, beyond Paraguay; nor in Southern Asia, beyond the Moluccas. They have not been found in the land of the Papous, nor in New Guinea, perhaps from want of sufficient inquiry; but it is certain that there exist none in New Holland, nor in any of the islands of the South Sea.

In the actual state of our knowledge on this subject, the fact recognised by Buffon, nearly one hundred years ago, has been confirmed, viz., that Apes, properly so called, and Makis have been found no where but in the Old World, and Sapajous (*Cebidæ*) and Sloths no where but in the New.

The Apes, limited to the Old World, and almost to its intertropical regions, are found, however, in Africa throughout its whole extent, but they are never found in any of the African islands.*

It is not so, however, with the Asiatic part of the Old World, for there exist at least as many species in the great islands of the Indian Archipelago as on the continent; commencing to the north in the island of Ceylon, and including to the south the Moluccas, and westward from Ceylon to terminate in the east with Japan.

The Asiatic continent supports no Apes to the north of the slope of the Himalaya, and from Arabia† towards the Red Sea, as far as the frontiers of China.

But amongst the Apes, the species are never found everywhere (*Ubiquestas*), and still more, certain groups of species are limited to certain Asiatic or African countries.

The Chimpanzée, for instance, belongs exclusively to the western and equatorial region of Africa; the Orang-Outan seems, on the contrary, to be limited to the great islands of the Indian Archipelago, Borneo, and Sumatra; at least, it is not yet proved that they are found on the continent. The Gibbons, which follow the Orang-Outan so closely, unquestionably belong as well to the Indian continent as to the great islands of the Indian Archipelago, from Sumatra to

* The existence of the Magot at Gibraltar will be discussed afterwards.

* I do not believe that the existence of any species of Ape in Madagascar has been proved; but they are said to exist at Fernando Po.

† The species found in Arabia, P. Hamadryas, and common in the mountains of Yemen, is of a group essentially African.

Manilla; but no species of Ape with disproportioned arms has yet been found in Africa.

The Guenons, or Cercopitheci with slender limbs (*Semnopitheci*) are found in the two parts of the Old World, inhabited by the Apes, but much more commonly in continental and insular Asia than in Africa; and, indeed, hitherto it seems certain that no Semnopithecus furnished with a thumb is found in Africa,* nor any Semnopithecus or Colobus without a thumb is found in Asia: hence we may conclude that there is no species common to these two parts of the Old World.

In respect to the Guenons, properly so called, if it be absolutely certain that the Malbrouck (*Pithecus faunus*) is exclusively African, as M. F. Cuvier believes on grounds not very satisfactory, we must then recognise all the species of this section as belonging to Africa, from Abyssinia and the Sahara as far as the Cape of Good Hope.

The Macaques with a tail, which pass nearly uninterruptedly into the Guenons, if no attention be paid to the fifth tubercle on the last molar tooth of the lower jaw, present, on the contrary, only one or two species in Africa, *P. Æthiops* and *Fuliginosus*, and all the others in Asia, not only continental, but also in certain islands of the Archipelago; but still no species which is common to both continents.

The Macaques without a tail, or the Magots, are still in the same situation as the Guenons; one species is African, and even in the most northern divisions of that continent, and the other two species belong to insular Asia, and particularly those islands towards the south and north-east; the *Cynopithecus niger*† in the island of Solo, and the *C. speciosus* in Japan.

In respect to the Cheropitheci or the Cynocephali, it has been supposed that all the species are African; but this is not positively certain, and it has even been pretty nearly ascertained that the *P. Hamadryas*, if it be not found in Persia, inhabits at least the country of Arabia Felix towards the Red Sea. M. P. E. Botta, one of my natural history assistants, and traveller for the Museum, has, in fact, met with considerable troops of them in the mountains of the Yemen, and we possess through him three living specimens.

The Sapajous and the Sloths, although limited exclusively to the New World, are not precisely in the same condition as the Simiæ, that is to say, the groups of species, and even perhaps the individual species are not, or, at all events, do not seem to be confined to certain southern or northern regions, nor eastern nor western parts of America.

We are, in the mean time, certain that the Sapajous are found only in South America, limited between the 23° to the north and the 27° to the south.

We are also equally positive, that with the exception of the island of St. Catherine, so near the continent, no species is found in insular America, and even in most of the great islands, as Cuba and St. Domingo.

The form of South America has undoubtedly been the cause why the groups of species of the Sapajou, and the species themselves, are exclusively found to the east of the great chain, and perhaps never to the west; in fact, from the Guyana to the southern extremity of Paraquay, the howling Sapajous, the Sagouins, the Ateles, the Sajous, the Saimiris, the Sakis, the Ouistitis, are found pretty nearly equally, being slightly modified by favourable degrees of circumstance, and especially by the extent of the forests. This unquestionably explains the rarity of the Sapajous generally on the western slope of the Corderillas, particularly beyond Chili, where they certainly do not exist.

M. Eydoux brought home with him a Saimiris, given to him at Payta; but did it belong originally to this part of Peru? I find also that Pennant speaks of a Sapajou by the name of *Gorgone's Monkey*, as if it came from the isle of Gorgona in the South Sea; but was this origin certain? On this point it is not easy to decide; it may be admitted, however, that in New Spain or in Southern Mexico there are Sapajous upon both slopes of the mountains.

The Makis belong exclusively to the old continent, and in a great measure to Madagascar, in which island hitherto no kind of Apes have been found. A small portion of the species of Makis hitherto described, inhabit western and equatorial Africa, and a still smaller part of the Indian Archipelago; and even this small number of species, foreign to Madagascar, belong exclusively to the Makis with long feet. In respect to the Makis, properly so called, the Indris and the Aye-Aye, these exclusively belong to Madagascar.

The Galeopitheci exist only in the Indian Archipelago.

From this it would seem that no species of Ape is found in Europe; but yet this is not certain, since several travellers worthy of credit affirm that they have seen the Magot (*P. Inuus*), so common on the opposite African coast, on the more inaccessible parts of the rock of Gibraltar. This statement is first made in a memoir by Imrie, entitled "Description of the Rock of Gibraltar," and inserted in the fourth volume of the "Memoirs of the Royal Society of Edinburgh," 1798. In fact, this author being desirous of supporting the opinion, that the crania found by the workmen employed on the fortifications were evidently not human, from their small size, adds, "I would rather believe that they

* The Colobus of Mr. Ogilby, which is certainly of African origin, has, however, the rudiment of a thumb.

† It is this species which some zoologists have erroneously considered as a Baboon.

belong to the species of Apes which inhabit in great numbers the inaccessible parts of the rock." In a report on the paleontological discoveries of M. Lartet in the neighbourhood of Auch, after having referred to this passage, I added, "in respect to the assertion that a species of Ape inhabits in great numbers the inaccessible parts of the rock of Gibraltar; this, I think, may be strongly doubted, both from *à priori* and *à posteriori* considerations."

"*A priori*, it may be asked, what these Apes eat, seeing that they are, in great numbers, on a rock where, perhaps, there is neither tree nor shrub furnishing fruits, and where we meet with only a few rare and wretchedly-stinted plants, as I was assured by my friend M. de Roissy, who was so told by M. de Corancez, who verified the fact *de visu*, having obtained from the governor permission to botanize over the rocks elevated above the fortification.

"*A posteriori*.—In opposition to the assertion that Apes exist there, we offer that of Dr. Rambur, who lived there sometime, and at different intervals; and having inquired into the truth of this assertion, which he admits was made to him by most respectable persons, he came to the conclusion that the whole is very doubtful, unless we admit that some Apes, often kept by the inhabitants, may have escaped from them to the rocks, and that these Apes came from Ceuta, on the opposite coast of Africa, where they abound."

It will be seen by the above, that my doubts merely extended to question the natural existence of Apes on this advanced point of Europe, and in sufficient numbers to perpetuate the species; and they were specially thrown out, in order to obtain further information. Accordingly, several travellers have assured me of the correctness of Imrie's assertion. Captain Freycinet assured the Academy, that in company with M. Quoy, he saw them himself; and Dr. Guyon, who, on the 12th July, 1822, saw two specimens, young and adult, at the same time, convincing himself that this Simia was really the Magot inhabiting the opposite coast of Africa, where he has frequently observed it from Ceuta as far as Tangier, and even as far as Bougie, the only part of Algeria where it is found. This is also confirmed by Dr. Foville, who had the opportunity, in a journey which he took in the autumn of 1837, on the rock of Gibraltar, of observing eight or ten, at the distance of a gunshot and a half above him; some of them, probably young ones, sitting amongst the rocks like human beings, carrying to their mouth the food and chewing it; whilst others, much larger, and consequently in all probability adults, walked on all fours at the head of the troop.

It is therefore, evidently, quite certain, that if there existed no species of Simia on the rock of Gibraltar at the period when M. de Corancez, and since when Dr. Rambur visited it: the latter was there several times, and on one occasion amongst others, he remained a month at Gibraltar, and traversed the rock in all directions as a botanist and looking for the Apes, a species of Ape certainly existed at the period when M. de Freycinet, M. Guyon, and M. Foville were there. But, with all this, there is no reason for admitting that these Apes are otherwise than individuals escaped from the houses in Gibraltar, as Imrie thought long ago; that where the circumstances are favourable, they may have, occasionally, propagated there, to disappear and to reappear in consequence of a new emigration.

And may it not happen that the English, from time to time, set free new individuals when the numbers are diminished, or that they have disappeared? The care which they take to prevent any one killing them, and the stories, unquestionably exaggerated, of the subaltern officers appointed to accompany travellers, and especially the statement made to Foville, that in 1837 there existed, in Gibraltar, three or four troops of Apes, each composed of from 30 to 50 individuals, withdrawing to the east or the west of the mountain, according to the direction of the wind. All these circumstances seem to confirm my conjecture; for upon what could 150 to 200 Apes live? On the rock of Gibraltar? On roots and aromatic herbs, say some. But how, supposing that there be any, could they tear the roots out of the earth? And when was it that Apes ate herbs, aromatic or not? But others say they live on fruits, which they steal from the gardens. When 100 or 200 of such thieves had proceeded to lay waste the gardens, so scarce and so valuable as those of Gibraltar, how will you prevent the inhabitants from killing them? And besides, if the Magot was really there as a native, how is it that it has not penetrated into the rest of Spain, as has been well remarked by Dr. Rambur?

It appears to me, then, more than probable, that there exist no living species of Apes in Europe, and that the Magot is, in Gibraltar, what the Porcupine is on the coast of Naples, an imported animal, as it is certain the Macaque is at present in the Isles of France and of Bourbon.

I must not, however, omit mentioning that a rather ancient author, Procopius, says, in a passage of the fifth book of his history, that there are, in Corsica, Apes like the human species.* But I have found this statement only in that author.

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* Corsicam veteres Cyrnum dixere; in eâ simiæ ad humanum fere nascuntur effigiem equorumque armenta passim vagantur sed paulo supra oves hi magnitudine sunt.

COURSE OF LECTURES
ON THE
PHYSIOLOGY AND PATHOLOGY OF THE BLOOD,
AND
THE OTHER ANIMAL FLUIDS,
DELIVERED IN THE SESSION OF 1839-40,
AT THE
School of Anatomy adjoining St. George's Hospital.

By HENRY ANCELL, Esq., Surgeon.

Lecture XXI.

Varieties of pus.—Morbid serous effusions: from inflammation; general plethora; mechanical causes; poverty of blood; poisoned blood. Their character; chemical analysis.—Fatty blood; analysis of.—Pathology of the blood corpuscles: microscopical appearance of the blood observed by Mr. Lane in purpura; Schultz's and Donné's views. — Animals in the blood.—Toxicohæmia of M. Piorry: causes of poisoned blood; diseases referrible to poisoned blood; symptoms; post-mortem appearances.

Gentlemen:—In my last lecture I pointed out the circumstances in which pus resembles, and those in which it differs from blood, and the relations which subsist between pus and mucus. But I have yet to state, that the fluid poured into the parenchyma of organs, and upon the surfaces of tissues, although retaining the name of pus, presents various appearances: it sometimes resembles a turbid serum, or sanies; it may have a grumous appearance, or it may assume a solid form, like tubercle; pus, from the same part, will frequently alter its character, from a thick cream to that of curds and whey, or the dregs of wine; its colour may change from white to yellow, green, chocolate, or various shades of red, and its smell may become fœtid. Thus we find enumerated by authors:—1. Homogeneous creamy pus. 2. Puriform mucus. 3. Curdy pus. 4. Serous pus, or sero-purulent fluid. 5. Lardaceous pus. All these varieties are said to consist of globules, as already described, swimming in a fluid, which resembles in most particulars the serum of the blood; but a rigid microscopico-chemical investigation of these fluids is still a great desideratum. The different qualities of pus, so far as they are known, depend upon the quantity of globules, and the qualities of the liquid in which they are suspended; upon the admixture of hematosine or of the red corpuscles of the blood; and M. Andral states, that grumous pus contains coagulated fibrin. According to Gendrin, pus furnished by scrofulous ulcers contains a larger quantity of soda and of chloride of sodium, to which its remarkable fluidity is owing; and Preuss found caseous matter in a scrofulous abscess. Carbonate, phosphate, and urate of lime, have been detected in the fluid of ulcers occurring in the gouty diathesis; and the pus of caries contains phosphate and carbonate of lime. A curious statement is made by M. Donné; he found living animalcules in the pus secreted from the glans penis, when affected with chancres, none being observable in the gonorrhœal discharge, in pus from buboes, or in syphilitic fluids from other parts of the body. Not only do the above-marked peculiarities occur, but in pus presenting the same general appearance, and, so far as analysis has at present determined, possessed of the same chemical properties, there must still exist some unknown causes of these most remarkable differences, else how could it happen, that one kind of pus produces only slight local inflammation, another kind syphilis, and another small-pox? The modifications of pus have, in truth, been but little investigated; they have been referred to some vague and totally unintelligible operations of the nervous system; and this explanation, which, in fact, explains nothing, has superseded all investigation of the relations which, *à priori*, might be supposed to subsist between the qualities of the pus and those of the blood, from which it is derived. How obvious is it, that every circumstance which modifies either the quantity or quality of the blood circulating in a suppurating part, alters the pus? Not only so, but the altered habit of any organ, in any way concerned in the changes to which the blood is liable (and what organ is not?), however remotely situated from the tissue or part affected, will alter the characters of pus. Thus sudden changes in any of the healthy secretions, supervening diseases, the state of the digestive organs, air, diet, habits of life, idiosyncracy, temperament, will determine or change the nature of the discharge from a sore, by modifying the blood which circulates or stagnates in or around it.

Morbid Serous Effusions.—I have already stated that collections of fluid in the cellular membrane and serous cavities, constituting, in fact, dropsy, are the frequent consequences of hyperæmia, anæmia, hydrohæmia, and hæmatitis; it is necessary, therefore, to revert more particularly to these serous effusions. The fluid which lubricates the serous membranes in health, was described, in connection with the physiology of the blood, on a former occasion (p. 70).

1. Inflammation is undoubtedly one cause of these effusions; and, perhaps, nothing can better illustrate the character of the fluid poured out from inflamed blood, in a part affected with recent and severe inflammation, than a common blister. I will adopt Mr. Dowler's description. "If a blister produce much inflammation, it will occasion

a greater or less quantity of adhesive matter to be secreted under it; this will be generally found at the most depending part, clearly proving that it had been thrown out in the fluid form, and had arrived at this situation by its gravitation. Here it gradually assumes the solid state, and, during this change, it retains between its fibres (which appear to be flattened and extended) the serum which is poured out at the same time; and it not unfrequently happens that the fibrin is so abundant, that the whole of the serum is inclosed in it, and that this forms altogether one solid and opaque mass. If, however, the quantity of fibrin be small, the solid mass so produced will be semi-transparent, and have a gelatinous appearance, hence it is usually denominated a *jelly* blister." If the solid compound be removed, and pressed strongly in fine linen, the serum exudes, while the fibrous part remains: this fibrin is exactly similar to that of the blood.

In fact, the liquor sanguinis exhales in a fluid form, and its fibrin coagulates afterwards. Now, Dr. Babington regards the serous effusions, at present under consideration, as occurring in almost every instance in an analogous manner. He remarks, that when an effusion of serum takes place, there is also a deposition of fibrin in some neighbouring part. When the fluid of hydrocephalus, for instance, contains albumen, and is analogous to the serum of blood, a considerable, permanent, gelatinous or fibrinous deposit is found under the pia mater, particularly at the base of the brain. In affections of the chest, effusions of serum coincide with thick fibrinous membranes. In ascites the fluid is frequently loaded with albumen; and in proportion to the quantity of the latter, may we expect to find fibrin, either diffused through the liquid in masses, flakes, or shreds, or forming the basis of some preternatural growth, or false membrane. In anasarca the gelatinous appearance of the cellular membrane depends upon a deposition of fibrin. Even in the case of hydrocele, Dr. Babington thinks that if we had the opportunity of examining, we should find a portion of fibrin deposited corresponding to the serum collected, which, supposing the blood were healthy, for eight ounces would only be about eight grains (Tables I. and II.). Again: the fluid of ovarian dropsy is of low specific gravity where the walls of the cyst are thin; and, on the contrary, loaded with albumen, where they are thick from depositions of a great quantity of fibrin. The interpretation of these facts is, that the liquor sanguinis itself transudes from inflamed blood as it circulates in the vessels of an inflamed membrane.

My account of the fluid products of inflammation is the following:—Blood recently and severely inflamed pours out liquor sanguinis. When it has been some time inflamed, earlier or later, under particular circumstances, it pours out liquor puris. The diminished quantity of salt in liquor sanguinis, under inflammation (Table XXVII.), renders it a solvent of the colouring matter of the red corpuscles (Lecture 5, p. 384); hence the corpuscles have been observed to lose their colour and form, and become broken down, in the blood stagnant in the capillaries of an inflamed part. Instead of liquor *sanguinis*, you have, therefore, liquor *puris* transuded, which latter contains iron, and, as compared with the healthy secretions, a diminished proportion of salt; page 747. This is the provision of nature to get rid of the stagnant corpuscles in an inflamed part, and to restore the circulation of blood. When you apply warm poultices and fomentations you frequently aid the natural process, for warmth and moisture being imbibed, the solution of the red corpuscles in the liquor sanguinis, and the consequent formation of pus, is hastened.

2. General hyperæmia is another cause of effusions from the blood, constituting the dynamic dropsy of Dr. Stoker. General plethora, in persons in the vigour of life, without any evidence of inflammation, or any organic affection, is occasionally attended with anasarca and dropsy of the cavities. Andral gives the following instructive case: A man, aged 40, had been a month affected with anasarca and ascites. No organic disease could be detected; he was full of life and vigour; eyes habitually injected; had repeated attacks of epistaxis; skin of a florid colour, contrasting strangely with the doughy state of the subcutaneous cellular tissue; secretion of urine not diminished; pulse full, bounding, rather quick. A few days after admission into *La Charité* he was seized with delirium, and shortly afterwards fell into coma and died. P.M. A large quantity of clear colourless serum was found in the cellular tissue of the extremities and in the peritoneum, about half a pint in each cavity of the pleura, a small quantity in the pericardium, and the subarachnoid tissue, as well as the ventricles of the brain, were filled. There was not the slightest trace of disease in the abdominal or thoracic viscera, peritoneum or pericardium, nor in the substance or membranes of the brain. Andral remarks, this must have been a case of dropsy from plethora; the symptoms which ushered in the fatal termination being the consequences of the sudden extension of the effusion to the cerebral cavities, and that timely bleedings might have removed it.

The character of the effusion in these cases, so far as the evidence reaches me, is that of a dilute serum. That absorption, under such circumstances, is diminished, we know very well; but there must also be an infiltration through the parietes of the capillary vessels, for it cannot be, that the fluids collected are derived solely from the

aqueous vapour, or very thin fluid, which naturally lubricates the parts.

3. Obstacles to the venous circulation, or want of correspondence between the power of propulsion in the heart and arteries, and the facilities for the return of blood to the heart, comprise another series of causes. The obliteration of a principal vein, and of its chief collateral branches, in a limb, is the frequent cause of serous infiltration in the parts below. There is one point respecting this which must not be overlooked: it may be, in some cases, that the liquor sanguinis actually coagulates within the vessels, the serous part exuding through their parietes and the fibrin being retained, so that the latter accumulates and forms a solid mass in the larger trunks; but that the obstruction of the trunks is the cause, and not the effect of the effusion, in many instances, is obvious. The pressure of a tumour on the principal veins of a limb is capable of producing a state of œdema; and the extent of the latter frequently coincides with the point of the venous obstruction. When the vena cava is obliterated, both lower extremities are infiltrated, effusion into the peritoneum occurring consecutively. When the vena portæ is obstructed, the effusion is said to commence invariably in the peritoneum, although, I must confess, there are strong reasons for doubting this exclusively mechanical explanation of ascites in almost every case. When the obstacle to the venous circulation is in the heart, or when the heart is inordinately active, the venous circulation being perfect, as in hypertrophy of the heart with or without valvular disease, or pulmonary disease, then the effects of the obstruction are felt in every point of the capillary system, and we have general dropsy. The observations just made respecting the character of the effusion are here again applicable; but it may be remarked, that even from these causes, the fluids are liable to vary according to the qualities of the blood from which they are derived.

4. Inflammation, sanguine plethora, and mechanical force and obstruction, by no means account for every case of effusion of fluid into the cellular and serous structures, from the blood. I have already stated that dropsy is a frequent consequence of poverty of blood. It results after long abstinence from sufficiently nutritive diet. It has been known to be epidemic, and part and parcel as it were of hydrohæmia. Dropsies are, you know, particularly prevalent in cold and damp climates. I have already described M. Edwards's experiments (p. 65), by which it appears that the fluid given off by the blood, under the influence of a cold and moist atmosphere, is reduced to its minimum. If the kidneys fail under such circumstances to perform a vicarious duty, the effusions in question take place; they are the consequence of an *aqueous* plethora. When, again, the opposite state of the atmosphere occurs, and transpiration is at its maximum, or the skin becomes bathed in sweat, the effusions disappear. The dropsical effusion after scarlatina, during the desquamation of the cutis, admits of the same explanation. Dropsy is a frequent consequence of anæmia, and of excessive loss of blood, however induced, and the effect of loss of blood is to *dilute* that which remains in the system, a fact shown clearly by the experiments of Dr. Davy, formerly detailed, and confirmed by Mr. Andrews. Much discussion has arisen to account for the circumstance, that dropsy *succeeds* hæmorrhages sometimes at a considerable interval; but the explanation, if the blood be admitted to a share in it, is obvious. The effect of hæmorrhage is not only to dilute the blood, but to promote absorption. Now this *thirst* of the blood must necessarily be felt by the capillaries, perhaps more than any other solid structure. It increases their tenuity and porosity; and accordingly, *after a certain degree of repletion*, they allow serous fluid to transude more readily than before the hæmorrhage, from the impoverished blood. There is another point worthy of regard in the effusion of serum from poor blood. That which remains in the vessels has its proportion of fibrin and red corpuscles increased; and in this sense the effusion is one of those remarkable efforts of nature, which we see constantly in operation, to restore the system to a just balance in the constitution of its parts.

5. A vitiated state of the blood is another cause of serous exhalations. Thus dropsies occur speedily after the application of poisons, especially those of certain reptiles. Dr. Stevens relates that a gentleman in Virginia, by way of experiment, swallowed the poison of the rattlesnake. It did not kill him, but produced general dropsy. I shall presently have to show, that poisons introduced into the human system act upon the blood. One of the most remarkable effects which they produce, is a loss of the power of coagulation. In these cases the serous part of the blood escapes readily, either pure or with variable proportion of colouring and other principles. This appears to be the cause of effusion in typhoid and malignant fevers, in which the introduction of a few molecules of morbid matter, into the mass of blood, changes its properties so entirely, that fluids escape from the vessels, and are extravasated in every part of the body. These various causes of the effusion of fluid from the blood are, no doubt, combined in a variety of ways in the same case. Andral gives an instance of dropsy in which there was "no blood to be found," nothing but a reddish watery fluid. In many of these cases the slightest irrita-

tion of the skin will produce œdema, the application of sinapisms to the limbs for instance, and erysipelas puts on the œdematous form. Thus then we see the numerous causes upon which serous effusions may depend, and their intimate relation not only with the quantity of the circulation, but with the *qualities* of the blood.

With respect to the characters which these serous effusions assume, in addition to the facts laid before you on a former occasion, I should state that when they are thrown out slowly, they sometimes contain very little animal matter, as occasionally happens in chronic hydrocephalus. They are sometimes turbid from the admixture of pus. The nature of the fluid also differs according to the texture of the part; thus the fluid from the arachnoid is, for the most part, thinner than that from the coarser membranes. In one case, after the sudden suppression of milk, dropsy supervened, and the abdomen became full of a fluid, which, on being drawn off, resembled whey, exhaled an acidulous odour, and afforded a substance exactly resembling caseum. In THE LANCET of July 11, 1835, a case is detailed, in which the scrotum and the lower extremity of a young man were infiltrated with a remarkable fluid, having all the chemical and microscopical characters of milk; and this was connected with an exanthematous eruption, and an open ulcer. The fluid of ovarian dropsy has for the most part the greatest quantity of animal matter; it has been found so loaded with albumen, as to resemble pus. An interesting case of ascites is detailed by Mr. Ayres, from which it would appear, that the fluid effused consisted almost, if not entirely, of liquor sanguinis, and that it must have existed in the abdomen for a considerable time without depositing its fibrin, since it coagulated in a few minutes after paracentesis. When these fluids contain cholesterine, or a substance closely resembling it, if viewed by transmitted light, they present the appearance of minute pearly scales, with an iridescent lus-

TABLE XXX.

Analyses of Dropsical Fluids from Marcet, Bostock, Berzelius, &c.

Fluid.	Spec. Grav.	Albumen.	Uncoagulable Animal Matter.	Chlor. Sod. with Trace of Chlorid. Potassium.	Soda, Carbonate of ditto, Trace of Sulphates.	Phosphat. Lime, Traces of Phosp. Iron, & Magnes.	Sulphates Lime and Potassa.	Urea and Osmazome.	Fibrin.	Water.	
Spina Bifida ..	1007	trace	2.20	7.65	1.35	.20	.....	....	....	988.6	=1000
Spina Bifida ..	—	5.0	7.0	10.				....	....	978.	"
Hydrocephalus	1006.7	trace	1.12	6.64	1.24	.20	.....	....	....	990.8	"
Hydrocephalus	—	1.2	2.8	10.				....	....	986.	"
Hydrocephalus	—	16.6	2.67	7.09	.28	trace	.....	....	....	988.3	"
Ventricles, Arachnitis	—	6.	.....	7.	1.4		trace	3.	....	982.6	"
Ascites	1015.	22.6	2.5	6.	1.9	.....	.5	....	....	966.5	"
Ascites	—	42.5	10.	10.	.....	.....	.....	....	....	937.5	"
Ascites	—	52.	12.1					....	1.2	934.7	"
Hydrothorax ..	1012.1	17.	2.	6.	1.8	.5	.....	....	....	972.7	"
Hydrops Pericardii	1014.3	23.	2.5	6.	1.5	.5	.....	....	....	966.5	"
Hydrocele	1024.3	71.5		8.5				....	....	920.	"
Hydrocele	1024.	68.5	11.	8.				....	....	912.5	"

tre, swimming in a fluid. The salts which they contain are for the most part those of the liquor sanguinis, the chief differences being in the nature and quantity of the animal matter. I lately examined the contents of an enormous hydrocele, of several years' standing. Its specific gravity was 1.007; it did not coagulate, nor was any albumen detectable by the usual tests; the 7 parts in the 1000 were made up by saline matter, and consisted chiefly of chloride of sodium. It is evidently futile to look for the cause of these differences in the "action of vessels" alone, even suppose we admit, that no fluid can transude through the vessels from the blood, without some modification taking place, which is probably correct; still, altered states of the blood, whether of the whole system or of the part, must alter the character of the effusions; accordingly, when we find urea, cholesterine, caseum, fibrin, albumen coagulated or not, and specific salts in these fluids, we are called upon to ask ourselves, not only what is the state of the vessels of the part, but what is or has been the state of the blood?

Before I quit the subject of morbid serous effusions, one word respecting dropsy and diseased kidney. Dr. Osborne has shown that the diseased kidney, in a great number of instances, coincides with diseased heart, bronchitis, and gastro-enteric inflammation; and he traces all these affections, in a great many instances, to one common cause—suppressed perspiration. Here, then, we have the *blood*, the common origin of these affections. Atmospheric causes are rendered more productive of these results in habitual spirit-drinkers. But we learn, also, that the blood is *buffy* when renal disease commences, that the extent of disease discovered after death is in proportion to the degree in which the urine has been coagulable. "In some of the cases in which this was complete, the entire cortical part of the kidney was superseded by morbid deposition;" and, in some instances, "the emulgent veins were filled with a substance resembling the buffy coat of the blood." Do not these facts lead us directly to the blood, but more especially to the liquor sanguinis, for a clue to the structural disease of the organ; a disease regularly progressing in proportion to the quantity of albumen in the urine, and to the altered qualities of the excretion, which latter obviously contains a serous effusion from the blood?

Excess of Fatty Matters in the Blood.—The turbidity of serum was described in Lecture 7, and ample proof given, that, even in ordinary good health, the liquor sanguinis is liable to an excess of fatty matters. But there are several cases on record, in which the blood has been found diseased in this respect to a very extraordinary extent. As drawn from the vein it has appeared perfectly white like milk, and after cooling the crassamentum as "purely" white as the serum, the two parts being distinguishable only by their consistency. It has been compared also to custard. It is described as being sometimes alkaline, or neither acid nor alkaline, coagulable by heat, but not precipitable by bichloride of mercury, and as containing very few corpuscles. In the case analysed by Lecanu, of which the following is the result, there were only four drachms of a slate-coloured clot without fibrin, to twenty ounces of blood.

TABLE XXXI.

Analysis of Two Specimens of White Blood.

1. *By Lecanu.*

Water		794
Albumen		64
Fatty acid		
Cholesterine (1.08)		
Oleine		117
Margarine		
Stearine		
Salts		25
Extractive matters		
Hematosine		traces
		1000

2. *By Zanarelli.*

Water		905
Albumen		76
Fatty matter crystallised		4
——— uncrystallised		6
Osmazome		5
Acetate of soda		
Chlor. sodium and potas.		
Alkaline sulphate and phosphate		4
Carbonate of soda, and loss		
		1000

It would appear in these instances, that the fatty matter had displaced the red corpuscles and fibrin, but I am not aware that any microscopical examination was made. The stearine, oleine, and margarine, are not met with in healthy blood. In all the cases reported in the Journals, which I have had the opportunity of examining, the patients appear to have experienced some inflammatory attack. Most frequently pain in the "side," or right hypochondrium, with fever: many of the individuals have been drunkards, and they all appear to have recovered after copious and sometimes frequently repeated bleeding. The blood removed by leeches was equally white. In the greater number of instances, the serum being white, a red clot has separated; so that if all the cases to which I have referred depend upon the same morbid condition of the blood, the disease must vary greatly in degree.

Pathology of the Red Corpuscles.—In the fifth lecture, the physiology of this, the more

solid part of the blood, was given pretty fully. I have now to mention that various other molecules, granules, or globules, are found in the liquor sanguinis, constantly or adventitiously, besides the proper blood corpuscles. In the first place, Hewson described granules ("globules") much smaller than the red corpuscles, and he took them to be the nuclei thereof. Mr. Lane has distinctly traced these granules from the chyle (p. 152, vol. i., 1839-40)—having confirmed the correctness of the statement there made, by several new observations. We have therefore, for a certain period after digestion, chyle granules circulating in the blood. Müller considers it possible that the nuclei of the elliptical corpuscles of the frog are derived from these "chyle globules," and states, from observations made upon the reptiles in question, that they are identical with those of the lymph, and are poured into the blood with the lymph and chyle; but he represents these chyle granules in mammalia, as being larger than the nuclei of the red corpuscles.

Besides the red corpuscle and chyle granule, Magendie and others describe large white globules as normal constituents of the blood. "They have neither central spot nor prominence, and are flat, having a small spot of a lighter colour than the rest, giving them a lenticular appearance." Mr. Lane and myself find them more nearly resembling the pus, or rather mucus globule, described at p. 68. Although few in number, they are constant in the blood of all animals, including man. Water, acetic acid, and ammonia do not act upon them, and there is reason to think they are particles of coagulated albumen or fibrin. M. Mandl states confidently that they are coagulated fibrin, and identical with the pus and mucus globule.

A knowledge of these circumstances is absolutely necessary, in order to determine what globules or microscopical appearances in the blood are really adventitious, and the products of disease. I have already mentioned the state of the question which regards the existence of the true pus globule in the blood, as a pathological phenomenon. My own observations are limited; but so far as they go, they are strongly in the affirmative, since I have seen several instances of suppuration, in which the white globules of the blood, were much more numerous than those above described, as occurring constantly during health; and they had the same form, colour, magnitude, and appearance, as the true pus-globule, however slight the difference may be between this, and the white globules usually met with in the blood. It has been suggested that the whole of these white globules are modified blood corpuscles; but there is no evidence that should lead to this conclusion, nor is it, I should say, at all probable.

With respect to the red corpuscles themselves, I have already pointed out that they vary in number in the blood of individuals of different temperaments, and in different diseased states of the vital fluid. Leuwenhoeck observed, that the appearance of the corpuscles differed in his own blood when in a bad state of health. Although I have not seen any thing to corroborate the peculiar views which Schultz entertains, it would not be right to pass them entirely over. He regards these bodies as being in a continued state of evolution and degeneration; that the old ones are dissolved and rejected from the system as the new ones arise; that the salts of the blood stimulate their vital contractility, and maintain them in a state of contraction during health; that they vary in specific gravity; that he can distinguish the old from the new corpuscles, and that the blood may become diseased, in consequence of the former not being duly eliminated, in which case it assumes a blacker colour. He states that the air acts only on the new corpuscles as the blood passes through the lungs; and hence the accumulation of the old, prevents the due reciprocal action between air and blood; that the old corpuscles are liable to accumulate in the portal system, by virtue of their gravity and the retarded circulation of the blood there; that this accumulation may diminish the motion of the blood even to stagnation; and that an excess of saline matter in the blood, as indicated by crystalline and stony deposits, prevents the solution of the colouring matter of the old corpuscles, which is necessary for their elimination, and under other circumstances they may be prematurely dissolved; and that their vital contractility is liable to paralysis. Upon these premises Professor Schultz founds his explanation of various diseases; and M. Donné also asserts, from actual observation, that in many maladies the form of the red corpuscle is altered; that in persons worn out by long illness they are less numerous, smaller, deformed, and their general and regular equality is lost.

Although these statements cannot be admitted without confirmation, it appears to me to be certain, that the red corpuscles are liable to changes in the course of disease, and that it is probable, these changes may render them unfit for circulation and the purposes of life. They may be deeply involved with the causes and symptoms of diseases, as in the case of inflammation already cited. Mr. Lane and myself have examined them in the blood of various patients, with very high magnifying powers, and we have frequently found them deteriorated and, as it were, broken up. We have seen this in the blood of a patient labouring under fatal pyohæmia. The late Mr. Field called upon Mr. Lane with a specimen of blood from a horse for

examination with the microscope. It presented a most remarkable and quite peculiar appearance, which led Mr. Lane to observe, "if horses were liable to *purpura*, I should say your patient labours under that disease." Mr. Field expressed great astonishment, and informed us that the horse's complaint was the one named. The day before this happened, Mr. Lane had examined the blood of a patient, labouring under purpura in St. George's Hospital. The two specimens are preserved; the peculiarity of their appearance is quite identical, and it consists in the corpuscles having lost their normal shape and regularity of size, with a remarkable dissemination of granules, as of unassimilated chyle, or something held in suspension by the serum. It is by no means improbable, that if these corpuscles become smaller than usual, or broken up, they may find their way into channels not destined to receive them, and so become the source of disturbance. This is exemplified, even in the dead body, by an observation of Mascagnie's, to the effect, that when arteries are injected with a solution of size, coloured with cinnabar, a colourless fluid exudes on the surface of membranes, the colouring particles not being able to permeate the pores.

Before I dismiss this subject, I may mention the following fact:—Magendie injected a large quantity of the blood of a turkey into the veins of a dog; the animal died in about 18 hours, and no trace of the elliptical corpuscles of the bird could be found; from which it would appear that they must have been dissolved, or have undergone some change, as they circulated in the body. When the blood of frogs was injected into the veins of dogs, the elliptical corpuscles disappeared totally.

Animals in the Blood.—I introduce this curious subject in this place, that it may not interfere with what is to follow. The notion that animals occasionally exist in the human blood is traced as far back as Pliny, and a great number of the older authors give particular examples of this occurrence. They have generally been found, one or two together, in blood extracted from the veins, and the descriptions given of them lead to the conclusion, that they are of various genera and species. Small animals have also been frequently found in the arteries, as well as the veins, of the lower animals of larger growth, but there is no recorded instance of their having been met with in the arteries of man. The presence of great numbers in the aneurysmic arteries of the horse and ass, seems to be a common occurrence, since Mr. Hodgson is quoted as having dissected nine asses, and found them almost constantly in the upper mesenteric artery, and once in the cœliac. There are also a great number of cases on record, of worms of different descriptions found in the hearts of animals. The animals alluded to are generally of the genera *Filaria*, *Hamularia*, or *Strongylus*; but none of those found in the blood of man are the proper entozoa of the human body.

Animals which resemble very nearly others occurring out of the body, have been found in or voided from various organs, as the stomach, intestines, urinary organs, uterus, skin, &c. The *distoma hepaticum* is found in the parenchyma of the liver. Two cases of the occurrence of *polystoma sanguicolum* in the blood of hæmoptysis, have been lately quoted from an Italian journal; both the patients had suffered under syphilis and psora, and died phthisical. In one case they are described as small, flattened worms, like minute leeches, and they are regarded as having occupied the parenchyma of the lungs. Since these various kinds of worms occur chiefly in the open passages, are not found in the fœtus or suckling, and are totally independent of the nature of the organ, it is highly probable that they are the result of ova accidentally received into the different parts, and there developed; and it is probable, that in some instances, as in the case of the liver, these ova have been conveyed with the blood.

Those occasionally found in the blood are also the result of ova introduced from without, since their characters correspond with the larvæ of well-known animals; and they never occur till that period of life when the ingesta may be supposed to contain ova. They have been met with most frequently in veins which communicate directly with the digestive organs. Next to this they have been seen most frequently in blood from the arm; but this is accounted for by the circumstance of bleeding being generally performed there. By the conveyance of the ova only, can we account for their occurrence in the sinuses of the skull, in the ranine, renal, anterior, tibial, and brachial veins, of each of which there are instances on record. When the animals are developed in the radicles of the vena portæ, it is impossible that they could pass the capillaries of the liver; hence they have been frequently met with in this situation. Breschet and Andral have found acephalocysts in the veins.

Mr. Bushman, who has published an interesting pamphlet on this subject, records a remarkable instance of which he was witness so recently as 1833. A boy about eight years old was bled while labouring under influenza. Fifteen worms were found in the blood extracted, and at a subsequent bleeding, eight entangled in the meshes of the clot, and five swimming in the serum. They were thin articulated worms, from half an inch to six or eight lines long, exactly corresponding with the *tipula oleracea*, abundantly found in the ditch and river water of the locality. The eggs of the flies are extremely minute, and are deposited in great numbers in the water, which the boy was in the habit of

drinking. He lingered for a great while in a dangerous condition, with symptoms of great debility, weak irritable pulse seldom under 120, severe wandering pains throughout the body, but especially in the back, œdema of the legs, thickly coated tongue, slight diarrhœa, sleepless nights, and not unfrequently delirium; but in about six weeks he was able to leave his room, and in a few weeks longer was quite recovered.

Toxicohæmia of M. Piorry.—Poisoned Blood.—In TABLE XXIII., a great number of facts are collected together, so that by reference to it, among other most important circumstances, you can see the remarkable effects which are produced upon the organs and functions of life, by the introduction of various medicines, poisons, and inorganic and unassimilable materials into the living blood. I have now to call your attention to the fact, that the blood is liable to become spontaneously medicated or poisoned, as the case may be, just as certainly as it receives the products of digestion from the alimentary canal, and that it draws materials from the air we breathe.

The causes of poisoning of the blood are, 1. Poisonous substances, the nature of which is for the most part known, introduced into the stomach and alimentary canal, or otherwise into the system. 2. Miasmata from the decomposition of animal and vegetable substances in a state of putrefaction, or from individuals affected with contagious diseases. 3. Morbid secretions, and morbid and even healthy excretory matters. Any of these substances, if retained in the body, or applied to its various surfaces, cavities, or parts, are liable to be absorbed into the blood, and to produce symptoms, as nearly as possible similar to those which result from the direct introduction of many of the same substances into the veins. The rapidity of action and the power of these poisons, frequently depend much upon the mode and channel by which they are introduced. In general, when taken into the stomach, they act slowly and less powerfully, more rapidly when introduced by the cellular membrane, very quickly indeed when respired, and sometimes almost instantaneously when introduced immediately into the veins. We learn from M. Roche's admirable memoir on the subject, that however introduced, when poisons reach the blood, one of two things may occur. I. They may exist in the circulating mass, as foreign and noxious agents, until they are separated by one or more of the organs; the blood in this instance being the *vehicle* by which they are received into and transmitted through the economy (19).* II. They may lose their chemical character; and whether they do so or not, they may produce positive modifications in the vital composition of the blood itself (7, 8, 39, &c.). Perhaps, strictly speaking, the latter only can be called cases of poisoned blood; but since foreign substances which circulate with the blood, in consequence of a failure of the organs to perform their functions, or by virtue of quantity (19), or frequent repetitions, may deteriorate the blood; and since the blood may be altered in its vital properties without presenting any sensible change: since, also, changes in the blood have been very little inquired into, it is not possible to distinguish between the two; nor can we at present determine the *modus operandi* of a poison upon the blood, by the effects produced; and it is hardly credible that active substances even pass through the blood without producing some change in it, however temporary and unappreciable. It may, however, be remarked, that a great number of those materials which are merely introduced into the blood, become eliminated in recognisable forms, by the organs, so that if the quantity be small, their introduction gradual, and the powers they possess not too great, they are by degrees thrown out of the system again, and their effects subside; in which case it may be concluded that the poison was mixed and not combined with the blood.

There are many diseases in which there are positive proofs of an alteration having taken place in the blood, and that the blood has been truly poisoned. But there are others which are, with strict propriety, regarded as poisoned states of the blood, since their symptoms are closely analogous to those which we can produce experimentally by the introduction of poisons into the blood (77, 78, 79). True poisoning, with animal, mineral, and vegetable substances, whether introduced by the stomach or otherwise, induces diseases of the blood, as proved in numerous instances by the discovery of the particular poison in the blood, and by the strict identity which subsists in the symptoms induced, whether they have been received by any of the various channels of absorption, or injected directly into the veins (42, 46, 54). M. Roche regards the plague, yellow-fever, typhus, cholera, and intermittents from marsh miasmata, as the results of unknown principles developed or diffused, for the most part, in the atmosphere, absorbed into the body, and blended with the blood; and their first effect is to produce, either by simple mixture or by combination, some change in the properties of the blood; although it must be confessed, that in some instances there is no positive proof of any alteration in the blood, yet it is by no means ascertained that such an alteration does not take place; the principles by which these diseases are produced may elude our means of detection in the blood, as they do in the

* All the small figures in the remaining part of this lecture refer to the experiments in TABLE XXIII.

atmosphere. In small-pox, measles, scarlatina, hooping-cough, hydrophobia, and the effects of the bites of venomous animals, there occur, 1. The inoculation of a virus. 2. The absorption of the virus. 3. The consequent development of general or constitutional symptoms, particularly nervous symptoms. 4. An effort, successful or not, at elimination, as shown by cutaneous eruptions, odorous effluvia, and increased secretions and excretions. "This quadruple succession of changes indicates some change in the blood, the particular symptoms being determined by the nature of the morbific principle."

You will readily understand, from the infinity of causes by which the blood is liable to be poisoned, that the symptoms and progress of toxicohæmia must vary greatly, and that the numerous diseases which the latter term must necessarily comprise, with a view to practice, can only be studied in detail; but there are a few general considerations, as regards the whole of them, which I will mention here. In some cases the effects of poisons on the blood are almost instantaneous, sometimes very slow, and these differences are illustrated to a certain extent by a comparison of epidemic with contagious diseases; the former sometimes destroy life from the moment of their invasion, as happens in plague and cholera; in the small-pox, on the contrary, there is a determinate period between the introduction of the poison and the commencement of the symptoms, and the latter precede the eruption three days. The succession of the symptoms from all poisons in the blood, follows the same order, differing greatly in periods and degrees. A general malaise for the most part indicates the absorption of the poison: a rigor is a very frequent consequence of taking active poisons, and it is the most frequent commencement of epidemic diseases. From whatever source the poison may be derived, when the poisoned state of the blood is fully developed, we may observe,

1st. Great disturbance in the action of the heart and the circulation of the blood. Tremor and acceleration of the heart's action, have been noticed from the poison of arsenic and corrosive sublimate by the stomach; or the heart's action may be rendered weak, irregular, slow, or may be arrested, by morphia, digitalis, and other poisons, precisely as happens when the same poisons are injected into the blood (3, 39, 44, 48). There are some well-known poisonous substances, then, which produce effects immediately and unequivocally on the heart's action: the effect of epidemical influences on the heart is not less obvious. Febrile symptoms precede the eruption in small-pox, and can scarcely be attributed to anything else but the action of the variolous poison in the blood. At the commencement of certain epidemics there is a great tendency to syncope: in the cholera we find rapid and well-marked failure in the action of the heart, the pulse becoming filiform and imperceptible; and, in fact, in epidemic and contagious diseases, there are many effects produced upon the action of the heart and arteries, precisely analogous to those which result from the introduction of poison into the blood, whether by injection into the veins or otherwise. M. Piorry remarks, that the absorption of the principles of the urine and of cancerous deposits, is equally often followed by palpitation and other affections of the heart and circulation.

2ndly. Disturbance in the respiration. A poisoned state of the blood is very frequently expressed in these essential organs of sanguification (56, 61, 65). In a great number of epidemical diseases the respiratory symptoms differ in no respect from those which result from the introduction of poisons into the blood. Eruptive poisons often act upon the lungs. Certain epidemics are specially characterised by cough and other pulmonary effects—witness rubeola. The absorption of animal fluids, as of milk, is often also followed by diseases of the lungs.

3rdly. The functional disturbances of the alimentary canal from the action of poisons however introduced into the blood, (77, 78, 45,) are strictly analogous to those which occur in epidemic and contagious diseases. Loss of appetite, thirst, epigastric pain, nausea, vomiting, hiccough, alvine dejections, colic, dysentery, distension or contraction of the alimentary tube from the action of gases; all occur in the most variable combinations, and with the most variable intensity, according to the nature of the epidemic, or of the poison introduced, its quantity and other circumstances. Orfila says, "the practitioner should never lose sight of the analogy, I might say the perfect resemblance between the symptoms produced by certain poisons, and those which constitute many spontaneous diseases." The analogous effects of morbid secretions, particularly of urea in the blood, upon the alimentary canal, were mentioned on a former occasion.

4thly. Nervous symptoms. The effects of poisoned blood on the nervous centres may be delirium, convulsions, tetanus, or arrest of muscular action, and of respiration and death (36, 51, 52, &c.). In epidemic and contagious diseases, precisely analogous cerebro-spinal symptoms may occur. Frequently, in the earlier stages, there is cerebral congestion, as from the action of opium; sometimes from the commencement a contrary state is observable. In typhus, yellow-fever, plague, small-pox, we have tinnitus aurium, muscæ volitantes, stupor, coma, delirium, sometimes gay, sometimes sad, durable or transient, muttering or amounting to fury. Convulsions frequently mark the commencement of eruptive fevers, as small-

pox; and tetanic affections characterise many fevers. None of us can have seen delirium as an effect of belladonna, and as a symptom in some cases of typhus, without remarking their analogous character. Delirium from the retention of urine, fury in milk fever, coma in diseased kidney, also illustrate the nervous symptoms which result from poisoned or vitiated blood.

5thly. Cutaneous affections. In many species of poisoning the skin is remarkably affected, arsenic will produce brownish spots, the salts of morphia, pruritus; various medicines various eruptions. The poison of muscles is followed by colic, nausea and vomiting, cold chills, pain in the head, fever, then a remarkable eruption on the skin, and ultimately, in some instances, by desquamation of the cuticle. Epidemic cutaneous affections are attended with analogous symptoms.

That poisons, however introduced into the blood, do not produce their effects in the same manner, or upon the same organs, is an unquestionable and most important fact; it accounts to a certain extent for the varieties in the symptoms, progress, terminations and post-mortem appearances of diseases. Some act specially on the heart (44), on the stomach and bowels (45), on the general capillary system (42), on the kidneys (46), on the liver (50), on the stomach alone (63), on the lungs (56), on the brain (47), on the spine (37); some on the uterus, as ergot; some act simultaneously and universally on all the organs, and leave not a trace of any organic affection behind. These effects are combined, as we have said, in various ways, and influenced by various circumstances, as the dose, mode of introduction, sex, age, season, climate, epidemic constitution, temperament, idiosyncracy, proportional development of parts, state of integrity of organs, and most especially by the previous state of the blood. Toxicohæmia may produce hæmatitis; and it may be complicated with anæmia, hyperæmia, or hydrohæmia. If we were to attempt to explain how it happens that particular organs are effected rather than others, we must do so upon the most crude hypotheses, we must, therefore (as well observed by M. Piorry), accept the facts, without being able to account for them: "Chemists cannot tell you why carbon has more affinity for oxygen than for azote; nor can physicians tell why cantharides taken into the blood, act rather upon the kidneys than upon the brain." Whether we regard medicines or poisons, morbid secretions, excretions, contagions, or miasmata, absorbed into the blood, these observations are equally applicable.

The post-mortem appearances of blood from toxicohæmia, however induced, are extremely numerous; but beyond a superficial survey, little attention has been paid to them. There is a correspondence between these appearances, whether the blood has been poisoned by substances artificially applied to it, or by the unknown causes of diseases. I must beg to refer you, in the first place, to TABLE XV., by which you will be reminded, that various substances added to healthy venous blood out of its vessels, before it has lost its vitality, will prevent, retard, or hasten its coagulation, or consolidate it, or otherwise destroy its capability of undergoing that process; more particularly that poisons will render it uncoagulable, or rapidly solidify it by decided chemical change, or render it grumous or viscid and tar-like, or rose-coloured, brown, chocolate, black, and will alter its general appearance in a hundred different ways. In the second place, you will find, by TABLE XXIII., that poisons added to the living blood, circulating in the living system, will render this same blood incoagulable (2, 6, 8, 23, 24, 25, &c.); chocolate brown, and so altered that it would not take the scarlet hue during life (8); viscid, greenish, brownish, and incoagulable (9); resembling milk that had turned sour (19); consolidated (26); thick and grumous, like soot (27); oily, fluid, and bluish (39); black (92). Thirdly, if you refer to the history of the blood in epidemic and contagious diseases, as handed down to us by our forefathers, and recorded by some of the best observers among the moderns,—in those maladies which we have referred to toxicohæmia, whose symptoms and effects on the living body, are so closely analogous to the effects of poisons injected into the veins, you will find the whole series of analogies confirmed. You will find poisons introduced by the stomach rendering the blood incoagulable, or gelatinous, or producing changes in its colour, or consolidating it; the poison of the viper rendering the blood black and sanious; cholera,—black, pitchy, and tar-like; you will find it half dissolved, or fluid and grumous, dark-coloured, and speedily undergoing decomposition, in yellow-fever, as described by Dr. Copeland; and of various hues and degrees of coagulability, altered in its saline composition, emitting peculiar odours, or passing into a putrid sanies, percolating the vessels and staining the tissues, or forming sanious serous effusions in typhoid, contagious, and malignant fevers. Take the numerous facts extant, crude and vague although they be, bring to your aid the little knowledge we have acquired respecting the laws of absorption and elimination, for the purpose of reconciling apparent discrepancies, and you will have a cumulative argument, based upon facts and analogies, of irresistible force, in favour of the important part which a poisoned state of blood plays, in the economy of disease, and of the necessity which exists for studying the ante and post-mortem states of the blood, with all the aids of *modern science*.

NEW FORM OF VECTIS.

To the Editor of THE LANCET.

SIR:—Having this day been favoured with the Thesis of J. Ogden, Esq., M.D., on the use of the vectis; which thesis was written by him, in order to obtain the degree of Doctor of Medicine in the University of Erlangen. On finding that the thesis in question was merely for circulation amongst his friends, I take the liberty of culling from its pages, the result of twenty years' extensive experience in the manipulations of that important instrument, the vectis, so that a greater publicity may be given, through the medium of your excellent Journal, to the valuable information therein contained. Dr. Ogden begins by observing, "Firstly, the length of the instrument, before being curved, is fourteen inches. From this it will be seen that it is of sufficient length to admit of its application to the fœtal head before it has passed the brim of the pelvis. When curved, as represented in the drawing, it measures 12½ inches. The blade, measured from the joint, is, before being curved, eight inches: after having been curved, and when taken in a straight line from the inner part of the hinge or joint to the point beyond the fenestra, as shown by the line *a*, *b*, fig. 2, 7½ inches. This line forms a segment of an imperfect ellipse, the radius of which, on the line *c*, *d*, fig. 2, measures, in its greatest extent, an inch and a half. The handle of the instrument measures five inches, and, as in the common vectis, is provided with a hinge; so that it is, when folded, received into the concavity of the blade. The weight of the entire instrument is eight ounces. This is necessary, to ensure its being of sufficient strength. But it is chiefly in the shape and peculiar curves of the fenestra that the claim to originality rests. By these peculiarities, as will be shown presently, a more secure hold, as an extractor, is obtained on the chin or occiput. The diameters of the fenestra are—the longitudinal (*a*, *b*, fig. 2,) two inches, and the transverse (*c*, *d*, fig. 2,) 1¼ inches. There is in the fenestra a concavity to the extent of the eighth of an inch. On reference to the drawing this will be seen. But the impression unavoidably conveyed of a thinning or bevelling off is incorrect, as, on the external or dorsal surface, there is a corresponding convexity, so that the thickness of the fenestra remains unaltered. This was necessary, to obviate any risk of cutting or otherwise injuring the maternal or fœtal structures, and thus having the advantage gained by the concavity more than counterbalanced by the danger alluded to. The rim encircling the fenestra is of uniform thickness, and the width three-eighths of an inch. The width of the blade at *e*, *f*, fig. 2, is exactly an inch, and perfectly plane from side to side. The breadth gradually decreases to the hinge, where it is five-eighths of an inch. The thickness of the blade in its entire length, including the brim of the fenestra, is three-sixteenths of an inch.

"The mode of applying this vectis in a natural presentation, is to introduce it with its convex side towards the hollow of the sacrum; and when arrested by the contact of the curve with the promontory of the sacrum, it is to be carried under the ramus of the ischium to the right or left, as the case may require: pushing forward the instrument in the axis of the ear, and raising the handle, when the curve adapts itself to the chin, and becomes placed in a line from the ear to the vertex. The application of the finger to the ear is the best mode of detecting the position of the head, and consequently of showing the direction in which the handle is to be turned. In presentations of the face, the blade, by its curve, adapts itself admirably to the occiput, as well as in cases of chin towards the pubes and sacrum.

"In cases of breech presentation, by fixing the instrument in one groin, and applying the fingers to the other, and making steady traction during the expulsive efforts, I have always succeeded in extracting the child; and, in many cases, have been able to satisfy myself that, by not waiting for the unaided uterine contractions expelling the child, the risk of the funis being compressed, has been avoided, and life preserved. When, after the head has descended through the brim of the pelvis, it has become arrested at the outlet, in consequence of an unusual approximation of the two ischiatic rami, I have never experienced the slightest difficulty in dislodging it, by means of the power acquired by the instrument. In numberless cases of contracted pelvis, I have used the instrument with great ease, the curve being applied to the chin, when the head had rested in the contracted space of the superior aperture for twenty-four hours. In many cases, too, I have succeeded in delivering the woman, and in saving the life of the child, when in previous labours it had always been deemed necessary to use the perforator. In these cases, also, there has been no mark of injury to the child. In this way overcoming those difficulties arising from deformity, in which the deficiency of space is from the sacrum to the pubis, and where, in some cases, the contraction is so slight, that a little additional power to that which the uterus, aided by the ergot of rye, is capable of exerting, is sufficient to surmount it."

CASE 2.—Mrs. L., aged 40, whom I had been in the habit of attending, and who, in consequence of repeated rheumatic attacks, had become lame, and was deformed in the pelvis, had been by me always delivered, without much difficulty, by the aid of my

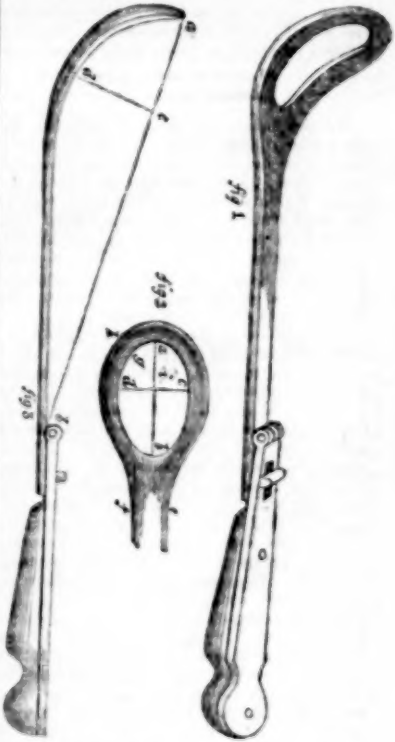
instrument; she had, in the present case, engaged a gentleman living in the village where she resided. Labour came on, and at the expiration of twenty-four hours, no progress having been made, my attendance was requested in consultation. I found the head impacted in the brim, and situated with the occiput over the arch of the pubis, with the face turned toward the sacral promontory, and the entire head firmly wedged in the superior aperture. The surgeon in attendance informed me, that he had during the night made every attempt to extract the head by the aid of the forceps and lever, and that he considered craniotomy necessary. I introduced my instrument, and requested him to extract the child. This he declined doing, and begged that I would make the attempt, and, if possible, save the child. The delivery was accomplished with great ease, and a living child was the result.

Case 3.—Mrs. T., aged 22, was attended, in this her second labour, by a gentleman who had been an apprentice with me. The head of the fœtus having been impacted for six hours in the brim, and all efforts to deliver by the common vectis having failed, I was sent for. On examination, I found the face turned toward the pubis, and the occiput towards the sacrum. I passed the instrument in the manner directed, and by fixing it behind the occiput, I succeeded, in a few minutes, in extracting the child, which, although feeble, and much swollen and discoloured, ultimately recovered.

I have subjoined the above cases from a list of six which are given, together with Dr. O.'s remarks on the mode of using his vectis in the different positions which the fœtal head assumes in the superior and inferior apertures of the pelvis. Some of your readers may be led to infer (from what Dr. O. has advanced as to the priority of his vectis to that of others in general use), that what has been stated is a work of supererogation; but for their further information, I would here remark that, having been an articled assistant to Mr. O., now Dr. O., for four years, I had ample opportunities of observing the great utility of his form of vectis over that of others, as recommended by obstetricians of the highest respectability. It certainly requires some address for its introduction, on account of its greater curvature, together with the superior aperture of the pelvis being fully occupied by the fœtal head, from the long and continued action of the uterus; but this difficulty may be overcome, by introducing the index and middle fingers of the left hand, raising the head, while, at the same time, the operator is introducing the vectis with the right hand. In conclusion, I feel glad that Dr. O. has published an account of his instrument, for I am sure if it become generally known, it will be duly appreciated by his professional brethren: for wherever a discovery is made, whether pharmaceutical or mechanical, it is worthy of the serious attention of the faculty, until proved by sufficient evidence inadequate to answer the purpose intended by its author. I have no hesitation in stating that if the rules for using the instrument be duly observed, it will be found to supersede the use of the forceps (they will literally become obsolete), and that the perforator will be less seldom required.

The accompanying sketch of the vectis, and remarks, are at the service of your valuable publication. I remain, Sir, yours respectfully,

T. H. Wardleworth, Surgeon.
Rochdale, July 9, 1840.



SULPHUR IN RHEUMATIC AFFECTIONS.

To the Editor of The Lancet.

Sir:—I agree with the observations of Dr. Munk, in your valuable Journal of July 18, that the virtue of sulphur as a remedy in disease is but little known, and far less appreciated than it ought to be. I have used it for some years, very success-

fully, in chronic rheumatic affections, in which I think it a valuable remedy. I was first induced to try it, from observing the very marked effect of bandages inclosing sulphur, when applied round the limbs affected (Coles's patent bandages being on this principle). The relief in many cases was immediate. Some time after this, an elderly female came under my care for psora, independent of which she was much troubled with chronic rheumatism. While she used the means for curing the eruption, all the pains of her former affection disappeared; but as the eruption soon disappeared also, and the application of the sulphur ointment was no longer required, it was given up. Soon after, however, the rheumatism returned. I then advised her to take a drachm and a half or two drachms of the following powder two or three times daily in milk:—

Washed sulphur, ℥iij;
Liquorice powder, ℥j.

By the steady use of this medicine, for the space of three weeks, she was entirely freed from her old tormentor. As this was some years ago she has had occasional returns, which have invariably given way to the same remedy. I have since tried it in a considerable number of cases, and though not successful in every one, sufficient relief was obtained to add credit to the application, and, in a vast majority of cases, the affection was entirely removed.

In addition to the washed sulphur administered internally, I am also in the habit of applying plasters around the wrists and ankles, composed of two-thirds of lead plaster, and one-third of washed sulphur; the first melted down, and the latter stirred quickly in, and spread on leather. I have found considerable advantage in exhibiting it in acute cases, as it does not in the least interfere with any antiphlogistic treatment. In some cases it is apt to purge too actively; in such, the dose is regulated accordingly. A gentle action on the bowels is, however, requisite. In cramp pains the sulphur is, to a certain extent, a specific; and Dr. Chapman's remarks, in his "Elements of Therapeutics," are founded on fact. I have frequently seen cases of cramp pains in the arms relieved by grasping a roll of sulphur.

Under such views, I am not in the least surprised at the success of Dr. Munk, when applying this remedy in cases of angina pectoris. The paroxysm of which may be, as Drs. Heberden and Forbes have suggested, *a cramp or spasm of the muscular structure of the heart*. I have, like Dr. Munk, found great objections made to the smell of sulphur remedies; and it would be a great desideratum if we could divest it of that fault without impairing its qualities. As this, however, is unlikely, we must bear with the inconvenience, confident that patients labouring under long-standing rheumatism, or cramps, would be glad of relief at the expense of a bad smell. Sulphur deserves a more general trial by the profession at large. Yours respectfully,

CHARLES CLAY, Surgeon.

101, Piccadilly, Manchester,
August 5, 1840.

THE OPERATION FOR SQUINTING.

To the Editor of THE LANCET.

SIR:—HAVING had frequent opportunities at the London Ophthalmic Hospital, Moorfields, in private practice, and amongst my professional friends, of observing the comparative advantages of the different methods employed for the division of the internal rectus muscle, in cases of strabismus convergens, I beg to state that I have in several cases derived great advantage from the use of a blunt hook designed by Mr. James Adams, of Broad-street, and which that gentleman has already offered to your notice. This instrument enables the operator to secure the muscle at its narrow part, and in a very confined space. We thus avoid the necessity of making a large incision in the conjunctiva, the healing of which wound has been slow and unsatisfactory in most of the cases which I have seen operated on by other means. It has always been found desireble to draw the eye outwards during the operation, and *hooks of various forms* have been used for holding the sclerotic; but almost all the patients whom I have seen, have complained that much pain was caused by the pressure of the hook whilst it was fixed in the sclerotic, near the inner margin of the cornea, and passed over the globe from within outwards, for the purpose of bringing into view the tendon of the internal rectus. It has been suggested that we may fix the globe without the assistance of any hook—glad, indeed, shall I be if we can hereafter effect this, and thereby save our patients some suffering.

I have recently fixed the eye by means of a delicate hook, proposed by my friend Mr. James Adams, and it appears to answer its design very satisfactorily, inasmuch as the acute angle which it forms allows the surgeon to draw the eye outwards, without seriously wounding the sclerotic, or exercising any pressure on the globe. I have used in different operations, and seen others use, the curved scissors, with the outer blade blunted at its extremity, or a narrow blunt-pointed knife. The knife appears to me to be the preferable instrument; but, as is the case with every new operation, we shall, no doubt, have numerous propositions offered to the profession, each in its turn advanced as the best mode of performing this operation, and experience alone can determine which plan may possess the greatest merit. I

have seen cases at our Ophthalmic Hospital, as well as in private practice, wherein the eye continued to turn slightly inwards for a short time after the operation, although the internal rectus had been completely divided, but in a day or two this obliquity has been lost. In some of the cases which I have had under my notice, the *external rectus* has, for a short time after the operation, drawn the eye outwards, but that obliquity has likewise disappeared. I have not seen any instances in which it has been necessary to divide other muscles than the internal rectus for strabismus convergens, although I have heard of such cases.

I consider, Sir, that the profession and the public owe much to our continental brethren who originated this operation, and to those gentlemen who by their talent and ingenuity have simplified it. The operation can now be performed in less than one minute, and in some cases with but little pain; it becomes our duty to *watch carefully its effects*, and to act accordingly.

I am, Sir, your obedient servant,

GILBERT MACKMURDO, F.R.S.,
Lecturer on Anatomy and Physiology at St. Thomas's Hospital.

7, New Broad-street, Aug. 1, 1840.

NEW FORM OF SHARP HOOK FOR SQUINTING.

To the Editor of THE LANCET.

SIR:—There are several kinds of sharp hooks, one of which is selected for the purpose of steadying the eye during the operation, in the use and necessity of which nearly all the profession agree, at least all who have had sufficient experience in the matter. The objection to the ordinary hooks in use for this purpose, is the pain produced by the pressure on the globe, which causes to the patient an exceedingly painful sensation, occasionally producing even sickness or fainting: indeed such is the objection to their use, that it has been proposed to abandon them altogether. If the operation could be rendered more easy without the use of the small double sharp hook, and if it were found unavoidable to give so much pain in its application, no one would be more anxious to dispense with it than myself.

What I wish to prove on this occasion is, that, in the use of a properly constructed hook, no pressure is required, nor need the slightest danger be apprehended of the hook going through the sclerotic. Also, that its use so far facilitates the operation and lessens pain, that it is most desirable it should not be abandoned for means which can be proved to be more unsafe and painful.

The object of a hook should be to hold firmly the part into which it is inserted by a resistance to some opposing force exerted in the direction of its axis, and not by exerting a force out of it: in other words, it is to draw, not to press. To effect which, I employ and would suggest to the profession the use of a hook, which, in size and shape is accurately indicated by the annexed figure,—by which it will be seen, that the sharp extremity of the stem is bent upon itself at such an angle as to require its introduction into the sclerotic, not by a sudden thrust at a right angle with its stem, but by a gentle motion in a line with the direction of the handle of the instrument, so as to enter the sclerotic obliquely, thus rendering all pressure on the globe unnecessary, as the motion is to direct the eye outwards, and not press it backwards. The acuteness of the angle of the improved sharp hook, and the shortness of its reflected extremity, are a sufficient protection against its being thrust through the sclerotic. That it facilitates the operation by bringing the parts more directly under the eye of the operator, and gives him a perfect command over the motions of the globe, which otherwise must be difficult to controul, are facts too self-evident to need any comment. It lessens pain, by allowing all the steps of the operation to be conducted openly, so that there is no danger of inflicting unnecessary injury on parts out of sight. Lastly, if there be one thing more necessary than another towards the success and safety of all operations on the eye, it is the being able to obtain the utmost steadiness of the organ by such means as shall cause the least pain to the patient, thereby rendering the operation more supportable, and less liable to the accidents of resistance. I am, Sir, your obedient servant,

JAMES J. ADAMS.

27, New Broad-street, City,
August 7, 1840.

In the Number of THE LANCET for August 8, we inserted a note from Mr. Adams, describing a new form of blunt hook, intended to hold the internal rectus muscle during the operation for dividing it. The hook is of simple construction, and more convenient than a bent probe, from its greater delicacy, and from being fixed in a handle. In stating this we have said all that the instrument deserves. Mr. Adams speaks of the instrument in the affectionate language of a parent, and proposed to chris-

ten it Adams's Hook, for which ceremony we see no necessity. The application of a hook for raising the muscle is of very early date in this operation. Mr. Lucas* made use of a blunt hook, and Mr. Ross Lietch† projected and applied, with success, "a blunt hook with a cutting edge on its concavity." The question relating to the blunt hook, therefore, is not one of novelty, but simply of convenience of form; and we doubt not but that many operators, who have hitherto practised most successfully, will still prefer their own plan to that proposed by Mr. Adams.

We are induced to make these observations, from having received this week another communication from Mr. Adams, relating to a new form of sharp hook, which we insert rather for its accompanying woodcut than for any particular advantage which the instrument offers. The hook would, undoubtedly, answer the purpose very well; but if we were to choose between it and the one constructed by Coxeter, of Grafton-street, Gower-street, according to Mr. Liston's instructions, we should give the preference to the latter. The hook used by Mr. Liston entirely obviates any pressure on the globe of the eye; and we cannot consider any operation decently performed which shall produce the pressure mentioned by Mr. Adams.

RUMINATION IN MAN.

To the Editor of THE LANCET.

SIR:—In consequence of a communication from me to THE LANCET of the 1st inst., on the subject of rumination in the human species, I received a letter from Lieut. J. A. Walker, on the half-pay 34th Regiment, of Cliff-house, Torquay, Devon, who keeps a very respectable establishment well calculated to improve the health of his young pupils, as well as to cultivate their minds. If you think the statement of one more case on that subject, treated, as he mentions in another part of his letter, "with attention to *simple* but often *neglected* points" of regimen, worthy of a place in your universally read hebdomadal, I send you the following extract from Lieut. Walker's very sensible letter:—

"Between two and three years ago a boy, aged 7, was placed under my care as a pupil, with special reference to his health, extremely diminutive, and in the habit of *bolting* and regurgitating his food; breath sour and fœtid, so much so as to taint the atmosphere of any apartment after a fit of ruminating.

"I simply made him eat slowly, masticate his food well, and use a sufficient quantity of salt, occasionally giving him some mild deobstruent, though at this distance of time I cannot exactly call to mind the precise medicine exhibited; at the same time I took especial care that he did not overload his stomach. In two or three weeks, adding a little salutary fear of correction to the medical measures, the obnoxious habit was pretty well subdued, and has long since been wholly abandoned: though still small, his physical development is much more healthy and vigorous. Indeed, from March 25th to June 25th, his expenses, under the head of medicine, amounted to exactly *threepence*." I am, Sir, your obedient servant,

WM. WILSON, Surgeon, R.N.

55, Upper Charlotte-street,
Fitzroy-square.

DEAFNESS AFTER THE USE OF QUININE.

To the Editor of THE LANCET.

SIR:—I have observed the relation in your Journal of several cases of dumbness having been produced by the exhibition of quinine, and, as the cause has been doubted by your correspondent S. Y. G., in a former Number of THE LANCET, I take the liberty of relating a somewhat analogous case, although the effect produced was upon the sense of hearing, which I believe is by no means uncommon, and is clearly referrible to the same cause, the effect of a powerful tonic upon the nervous system.

I have lately had under my care a lady, the subject of gangrene of the lung, followed by circumscribed abscess, with profuse and fœtid expectoration. The treatment adopted after the abatement of the pneumonia in the first instance, was principally the exhibition of large doses of quinine, commencing with nine and getting up to thirty grains a-day, which, with a little variation according to circumstances, was taken for several months successively. With the exception of a marked beneficial, though, unfortunately, but temporary influence over the disease, the only appreciable effect produced by these larger doses was a more or less complete state of deafness, which moderated when the dose was diminished, and disappeared entirely when the medicine was discontinued.

That quinine should have a powerful, though temporary effect upon the nervous system, is not to be wondered at, when we consider its specific effect in ague and some

* LANCET, vol. ii., 1839-40, p. 523.

† Ibid., p. 673.

neuralgic disorders; and that its influence should be exerted in the peculiar manner stated over the nerves of speech or hearing, I do not consider either singular or alarming. My patient took nearly eight ounces in seven months. Yours obediently,

C. R. Bree.

Stowmarket, Aug. 11, 1840.

THE LANCET.

London, Saturday, August 22, 1840.

The self-elected, irresponsible Councils of the Medical Corporations labour under certain hallucinations which the events of the last Session of Parliament might have helped to dissipate. Sir A. Carlisle, the College Knight and Champion, when he threw down his gauntlet a few months ago, declared that there were not more than 250 Medical Reformers in existence? What does the advocate of corruption say now? What flattering unction can he lay to the body (it would be absurd to write *soul*) of the Medical Corporations, now that petitions, with *five thousand* signatures, have been presented to Parliament? Those petitions were signed, in many instances, by the officers of Associations, and, at a very moderate estimate, they may be assumed to have emanated from 10,000 medical practitioners. They came from every part of the country; not a single counter-petition was presented.

If the number of legally-qualified medical practitioners be taken into account, it will be found that the call for no organic change was ever so unanimous.

But the agitation has only commenced; Medical Reformers will not slumber during the recess. They will not dream that the work is done; the certainty of victory will not lead them to throw away their arms. The corporators will strain every nerve in the struggle, for they know that it is a struggle for existence. The representative National Faculty of Medicine will absorb all their factitious powers, and will annihilate the sources of their revenues. They will be able to plunder their brethren no longer; and the monopolies and by-laws which put money into their pockets will wipe themselves away. Westminster Hospital, and every hole-and-corner concern with which a member of Council is connected, will not, therefore, be "recognised" as a school of surgery, to the exclusion of any other hospital of the kingdom. The schools will all find an equal footing; all the qualified practitioners of England, Scotland, and Ireland, will, on signifying their adhesion, be integral members of the new organisation, where they will be more than ciphers; they will form the constituency,—the elected or the electors—the legally-qualified practitioners of the empire.

The reasons for the establishment of a new Medical Faculty with a representative senate, are innumerable; but they may be reduced to one of overwhelming force. The members of the Medical Profession have an indefeasible right to self-government. *Twenty-one* men have no right to receive the money, to wield the power, or to tamper with the interests, of *twenty thousand*. Self-election renders the governing bodies independent of the members; election for life renders them irresponsible. We are governed without being consulted; and our money is expended by, and our interests are placed at the mercy of, men who treat us with contempt and defiance. If their conduct were as irreproachable as it has been infamous, the system of government would be revolting. Despotism and "paternal governments" may suit some climates, but Englishmen do not understand the former, and cannot tolerate the latter; they can be satisfied, and ought to be satisfied, with nothing less than the management of their own affairs, as long experience has taught them the danger of confiding to others the discharge of duties in which the former are the parties chiefly concerned. Self-elective, irresponsible corporations are alike opposed to the principles of justice, the habits of the people, and the constitution of the country. They have been abolished in England, in Scotland, and in Ireland. The burgesses of all the towns in the

kingdom have been emancipated. Are the members of the Medical Corporations alone to feel the galling yoke of slavery?

The Municipal Corporations were efficient, and accomplished many useful purposes; the Medical Corporations either do nothing, or they do more harm than good. It is admitted by all political economists, that the qualification of medical practitioners—to whom the lives of the people are committed—should be determined by well-defined tests; but what is to be said of eighteen or nineteen different conflicting examining bodies, conferring different titles, applying different tests, and selling licences to practise in every direction; some entitling the licentiate to practise in one corner, others in another; some allowing him to advise patients only; others to vend drugs, and give advice with them; some conferring exclusive privileges on men who have studied in a particular degree of latitude and longitude; and all acting independently of the members of the Profession, and of the Legislature, with a view to their own private petty interests?

Is that a state of things to be desired or continued, in which the Medical Corporations do nothing to promote medical science—take no interest in the public health—throw obstacles in the way of medical inquirers—damp the energies of teachers—and do not present an organisation in which the government of the country can have any confidence, or which can be consulted in medical matters upon any public emergency?

It appears to be generally admitted that Medical Reform is inevitable; the question to be examined, between this time and the next Session of Parliament, is, what the measure of reform is to be, and what Reformers should attempt to accomplish? Unanimity is desirable; and, though sound Reformers agree in the principles, it cannot be denied that there are some differences of opinion among them as to the best mode of carrying those principles into effect. It will now be more convenient to discuss than to suppress those differences, as there is nothing in them perilous to Reform; and calm discussion, by removing misconception, will leave less occasion for the mutual concessions and compromises which all practical measures demand.

In any measure of Medical Reform, the rights and the interests of medical practitioners must be regarded; but the public health, and the happiness of the people at large, should be its first object. The people, and particularly the poorer classes, in every part of the kingdom, must be provided with the best medical advice in sickness. They must not be left to die like the beasts of the field, without the aid and appliances of medical art; they must not be juggled out of existence by licensed or unlicensed quacks, in the cottage, the workhouse, or the hospital; they must not be misled by false titles, factitiously obtained; but the hospitals, and medical institutions of every kind, must be placed on a footing the most favourable to the public health, and the best calculated to encourage industry, humanity, and talent, so that the most deserving, and those who are best able to serve the public, may reap the highest rewards, and be placed in the sphere where they can be most useful.

Dr. Todd died at Hurst, near Brighton, on the 4th of August, after a lingering illness, which confined him to bed for six months. He was 50 years of age, and had long been in a delicate state of health. He was the author of an elaborate article on "Indigestion," in the "Cyclopædia of Practical Medicine," and of some other papers, which evinced a cultivated and philosophical turn of mind. Dr. Todd was in practice for some years at Brighton. He is said to have been "a consummate practical physician," by those who knew him best, and who are well qualified to form a correct judgment. All the time which he could spare from the active duties of his profession, was employed in the cultivation of physiology; and he had been engaged for many years in a series

of microscopical researches, which, had his life been prolonged, it is believed would have much extended the bounds of that science. His labour has not all perished with his life. A large collection of beautiful microscopical preparations attests his skill and assiduity in the department to which his inquiries had been devoted.

DISCOVERY IN ANATOMY.—Alexander Achillinus, Professor of Medicine in Pavia, lived between the years 1463 and 1515. He is much praised by Portal, and is said to have discovered the malleus and incus. Atkinson, in his "Bibliography," observes of him, "When his first work came out, it was soon reprinted. He was a good practical anatomist; although in filth and dirt a dandy."

Cyclopædia of Anatomy and Physiology. Part 19. Edited by ROBERT B. TODD, M.D., F.R.S., &c.

THE "Cyclopædia of Anatomy and Physiology" is unquestionably one of the best of the scientific works of the day, and, from the manner in which it is conducted, is calculated to display the ability of British physiologists, and raise them in the estimation of our continental brethren. The design of the work presented difficulties of no ordinary character, arising, in a great measure, from the disconnected position of the scientific members of our profession, and the national thirst after wealth in preference to distinction for mental ability and learning. Dr. Todd, however, the eminent editor of the Cyclopædia, has learnt to use the magic art by which men of most opposite pursuits have been associated in one common and brilliant task. Few works have appeared in this country in which so large and distinguished an association of contributors have been engaged, and very few have been offered to the public in which the writers have done such ample justice to the subjects entrusted to their care. It has been objected to this Cyclopædia, in common with others, that it was slow and irregular in appearance; this must ever be the case where numerous writers are engaged, and where each author considers his own subject as the most important in the whole volume. In many human designs we see similar instances of great undertakings for the public good frustrated and retarded in their progress by the wilful or inconsiderate delay of a single individual. We do not say that this has been literally the case in the present work, but we are glad to be able to congratulate Dr. Todd on the appearance of increased activity, as evinced in the publication of the present, and in the immediate prospect of another part.

With these prefatory remarks we will proceed to an analysis of the part before us, and select such passages as shall enable our readers to form for themselves an opinion of the merits of the work. Part 19 contains several articles of considerable interest: these are Instinct, by Dr. Alison; Irritability, by Dr. Marshall Hall; Normal Anatomy of the Knee-joint, by Mr. Higginson; Abnormal Anatomy of the Knee-joint, by Mr. Adams; and the commencement of an article on the Lacrymal Organs, by Mr. Wharton Jones.

The subject of Instinct is discussed in a most able and interesting manner; with regard to the inferiority of the intellect of animals as compared with that of man, Dr. Alison remarks,—

"It has been generally admitted, since the time of Locke, that the essential inferiority of the intellect of animals, as compared with that of man, lies in their very limited enjoyment of the faculty of *abstraction*, by which the mind is enabled to single out the different qualities or relations of the individual objects of sense, and make them the subject of *abstract thought*, and thereby form *general notions*, which are at once perceived to be equally applicable to many individual cases; and by help of which it continually elevates itself above the contemplation of individuals, and classifies and methodises its knowledge, and fits it for useful application—for the deduction of inferences in reasoning—for the formation of fancied scenes in works of imagination, and for the adaptation of means to ends in practice.

"It is obvious," also, that none of those still more general or abstract notions which continually suggest themselves to the human mind in the course of the operations that are excited by the senses, such, for example, as space, time, number, power, &c., are indicated by any manifestations that we see of the mental acts of the lower animals; and it may be stated, in general, that the limitation of their minds to particulars, and the want of the power of raising the thoughts to general ideas, and dwelling on the contemplation of these, is the grand obstacle to their adapting means to ends, drawing in-

ferences from premises, or enjoying the use of language. * * *

"Why is it, for example, that the monkeys, who have been observed to assemble about the fires which savages have made in the forests, and been gratified by the warmth, have never been seen to gather sticks, and rekindle them when expiring? Not, certainly, because they are incapable of understanding that the fire which warmed them formerly will do so again, but because they are incapable of abstracting and reflecting on that *quality* of wood, and that *relation* of wood to fires already existing, which must be comprehended, in order that the action of renewing the fire may be suggested by what is properly called an effort of reason. Or why is it, that the different classes of predaceous animals, although surrounded by the materials out of which the human race has manufactured so many implements of warfare, have never been able to avail themselves of any of them in aid of the instruments of destruction with which nature has furnished them? Apparently, because they are incapable of forming such general notions of the qualities and relations of external things, as are essential to the processes of imagination and reasoning, by which men are led to the contrivance, and guided in the use of artificial weapons.

"Again, although many of them are susceptible of the emotions of joy, and to a certain degree of gratitude and attachment, founded on the sense and recollection of benefits, none of them seem capable of forming the slightest notion of that Divine Power, which has suggested itself to the human intellect in all ages, and even in the rudest conditions of human existence; we should regard any act of praise or prayer as an infallible indication of a mental capacity of the same rank as our own."

The notion which we attach to the term instinct as contrasted with the reason of man is thus expressed,—

"The term, it must be remembered, stands in opposition, not to the *will*, but to the *reason* of man. The most correct expression of the difference between an action prompted by instinct and one prompted by reason is, that in the first case the will acts in obedience to an impulse which is directly consequent on certain sensations or emotions, felt or remembered; in the last it acts in obedience to an impulse which results from acts of reasoning and imagination. It is incorrect to say, that all the actions of animals differ from those of man in being performed without anticipation of their effects. Many of the most familar actions of animals are guided by a perfectly correct anticipation of their consequences (otherwise they would not be susceptible of training); but it is such an anticipation as implies the exercise only of the faculty of memory. The term reason is properly applied to the anticipation of those consequences of actions, of which we can be informed only by processes of reasoning and imagination, implying the exercise of the faculty of abstraction, and the formation of general notions or ideas."

The instincts of animals have been classified by different writers; thus,—

"Mr. Kirby has stated, that the principal instincts of animals may be referred to three heads: those relating to their food, those relating to their propagation and the care of their offspring, and those relating to their hybernation. But this enumeration is certainly defective, and, indeed, will hardly include several which he has himself accurately described. The following appears a more comprehensive enumeration:—Three great classes of instinctive actions may be distinguished: the first, designed for the preservation of individuals; the second, for the propagation and support of their offspring; and the third, for various purposes important either to the race of animals exhibiting them, or to other animals, but not distinctly referrible to either of the former heads.

"Each of these classes admits of obvious subdivisions.

"1. *Of instincts designed for the preservation of the individuals exhibiting them*, we may enumerate the following:—

"1. All animals are endowed with instincts prompting them to some means of escaping or repelling injury or violence, but these are exceedingly various, both as to the kind and as to the degree of complexity of the actions which they excite; from the simple retraction of the tentacula of the infusory Vorticella, or of the Medusa, Polype, or Actinia, up to the active and formidable resistance of the elephant or the tiger. The most common instinct of self-preservation excited by the emotion of fear, is that which prompts to flight, an instinct so obviously existing in the human species, that the effort by which it is resisted has in all ages been regarded with respect; and another very common propensity in animals is that which prompts to concealment. This is often combined with flight, as in most of the Carnivorous Mammalia, the Rodentia, the Cetacea, the diving birds, reptiles, insects, &c.; but some of the higher animals, and many of the Mollusca and insects, and others of the lower tribes, remain quite motionless, and counterfeit death when under the influence of fear; and it is remarkable that when the circumstances of the animals render this mode of defence the most effectual, it is that adopted, in preference to flight, even by single species of families, the other members of which show no such instinct, as in the case of the ptarmigan, which so frequently cowers, among the grey lichen, or the snow on the mountain-tops, instead of taking wing like the moor fowl, or in that of the hedge-

hog, which on occasion of any imminent danger makes no effort but that of coiling itself into a ball.

"In many instances the instinct either of flight or concealment is aided by very various special contrivances, equally instinctive, fitted either to deceive, or to alarm, or injure an assailant. Some even of the Mollusca, and some of the reptiles, as the toad, squirt water on him; many reptiles and some lower animals, as the scorpion, bee, wasp, &c., even some of the gelatinous radiata, have the power of emitting irritating matter of greater or less intensity; the electrical animals, as the gymnotus and torpedo, use their appointed weapons; the hedge-hog and porcupine oppose their sharp thorns to any one who attempts to molest them; many insects and some reptiles protect themselves by emitting peculiarly fœtid effluvia; the cuttle-fish tribe have the remarkable power of emitting an inky fluid, which darkens the water and hides them; and, on the other hand, there is reason to believe that the phosphorescent light which so many marine animals exhibit, may be suddenly augmented on occasion of any threatening of injury, and serve as a means of defence. The means of defence, and the instincts guiding them, in the case, not only of the higher Carnivorous animals, but many of the stronger of the Herbivorous classes, the elephant, the hog, the horse, the buffalo, the deer, &c., require no illustration."

In respect to the instincts of animals, it is difficult to select illustrations of any one class which shall be more interesting to the reader than the rest: we, therefore, from the rich collection before us, take the first that meets our eye, it relates to the contrivances resorted to by animals in the acquisition of food.

"But the more striking indications of contrivance in the actions prompted by this instinct are to be found in some of the less powerful of the Carnivorous tribes. The Lophius Piscatorius or fishing-frog, although a large fish, having no strength or speed, obtains its prey by stratagem, plunging itself in mud, or covering itself with sea-weed: 'it lets no part of it be perceived except the extremity of the filaments that fringe its body, which it agitates in different directions, so as to make them appear like worms. The fishes, attracted by this apparent prey, approach and are seized by a single movement of the fishing-frog, and swallowed by his enormous throat, and retained by the innumerable teeth by which it is armed.' A still more singular art is practised by the Chætodon rostratus, which feeds on flies, and, as Sir Charles Bell states, actually takes aim at them, and shoots them with a drop of water. The instinct of the myrmecophaga or ant-eater, which protrudes the tongue to allure flies to settle on it, and then suddenly retracts it to devour them, also deserves notice. A more complex art is practised by the ant-lion, which digs a pit-fall in the track usually followed by ants, and conceals itself in the bottom of it, waiting for its prey. But of all contrivances in the animal creation for procuring food, the most complex and artificial are those of the different genera of spiders, equally curious on account of the peculiar organs by which they spin their webs, as of the peculiar and varied instincts by which they are guided in using them. For example, 'any common black and white spider (Salticus Scenicus), which may always be seen in summer on sunny rails, &c., when it spies a fly at a distance, approaches softly, step by step, and seems to measure his distance from it by the eye; then if he judges that he is within reach, first fixing a thread to the spot on which he is stationed, by means of his fore feet, which are much larger and longer than the others, he darts on his victim with such rapidity, and so true an aim, that he seldom misses it. He is prevented from falling by the thread just mentioned, which acts as a kind of anchor, and enables him to recover his station.' Again, the kind of spider that has received the name of Geometric, 'having laid the foundation of her net, and drawn the skeleton of it, by spinning a number of rays, converging to a centre, next proceeds, setting out from that point, to spin a spiral line of unadhesive web, like that of the rays, which it intersects, and after numerous circumvolutions finishes this at the circumference. This line, in conjunction with the rays, serves as a scaffolding for her to walk over, and also keeps the rays properly stretched. Her next labour is to spin a spiral or labyrinthiform line from the circumference towards the centre, but which stops somewhat short of it; this line is the most important part of the snare. It consists of a fine thread, studded with minute viscid globules, like dew, which, by their viscid quality, retain the insects which fly into the net. The snare being thus finished, the little geometrician selects a concealed spot in the vicinity, where she constructs a cell, in which she may hide herself and watch for game; of the capture of which she is informed by the vibrations of a line of communication, drawn between her cell and the centre of her snare.'"

In the construction of fitting edifices for the protection and defence of themselves and their young, the instincts of animals are manifested to a most surprising degree. With one more paragraph on this subject from the elegant pen of Mr. Kirby, we quit for the present the stores of delightful information contained in this article; but we shall take the liberty of returning to it more than

once, for the purpose of selecting a short paragraph for the entertainment of our readers.

"Some species of spiders, M. Audouin remarks, are gifted with a particular talent for building; they hollow out dens; they bore galleries; they elevate vaults; they build, as it were, subterranean bridges; they construct, also, entrances to their habitations, and adapt doors to them, which want nothing but bolts, for, without any exaggeration, they work upon a hinge, and are fitted to a frame. The interior of these habitations is not less remarkable for the extreme neatness which reigns there; whatever be the humidity of the soil in which they are constructed, water never penetrates them; the walls are nicely covered with a tapestry of silk, having usually the lustre of satin, and almost always of a dazzling whiteness.

"The habitations of the species in question are found in an argillaceous kind of red earth, in which they bore tubes about three inches in depth and ten lines in width. The walls of these tubes are not left just as they are bored, but are covered with a kind of mortar, sufficiently solid to be easily separated from the mass that surrounds it. The door that closes the apartment is still more remarkable in its structure. If the well were always open, the spider would sometimes be subject to the intrusion of dangerous guests. Providence has therefore instructed her to fabricate a very secure trap-door which closes the mouth of it. To judge of this door by its outward appearance, it appears to be formed of a mass of earth coarsely worked, and covered internally by a solid web, which would be sufficiently wonderful for an animal that seems to have no special organ for constructing it; but when divided vertically, it is found to be a much more complicated fabric than its outward appearance indicates, it being formed of more than thirty alternate layers of earth and web emboxed, as it were, in each other, like a set of weights for small scales."

Dr. Hall's article resembles all that emanates from his pen, and is remarkable for its clearness and conciseness of thought and expression. In irritability we find him engaged on a favourite theme, and one in which he is most happy and at home. In comparing the irritability evinced in the different classes of the vertebrate series, he observes,—

"It is well known that the irritability of the heart, and of the muscular fibre in general, is greater in the mammalia than in birds, and in reptiles and amphibia than in the mammalia, whether we judge of it by the force and duration of the beat of the heart, exposed to the stimulus of the atmospheric air, or by the contractions of the other parts of the muscular system. Now this is precisely the order of the quantity of respiration in these animals, as ascertained by the pneumatomer, inverted. It is essential, in accurately determining the question of the irritability of the muscular fibre, to compare animals of the same class inter se; birds and the mammalia, reptiles and amphibia, fishes, the mollusca, &c., must be compared with each other, both generically and specifically. It is especially necessary to compare the warm-blooded, the cold-blooded, the air-breathers, and the water-breathers in this manner. However, the different classes may differ from each other; there are differences in some of the species of the same class, and especially that of fishes, scarcely less remarkable.

"Great differences in the duration of the beat of the heart are observed in fœtal, early, and adult states of the higher animals; this duration being greater in the first, and least in the last of these conditions. The order of the quantity of respiration is inverse.

"The law of the irritability being inversely as the respiration, obtains even in the two sides of the heart itself, in the higher classes of animals. The beat of the heart removed from the body does not cease at the same time in the wall of all its cavities, or of its two sides; but, as Harvey observes, 'primus desinit pulsare sinister ventriculus; deinde ejus auricula; demum dexter ventriculus; ultimo (quod etiam notavit Galenus) reliquis omnibus cessantibus et mortuis, pulsat usque dextra auricula.'

"Even in this case the irritability is greatest in the part in which the respiration is least.

"It was shown by Hook, in the early days of the Royal Society, that if, the respiration being suspended, an animal appeared to be dying, the beat of the heart and the signs of life were speedily restored, on performing artificial respiration, or even by forcing air through the trachea, bronchi, and pulmonary air-cells, and allowing it to escape through incisions made in the pleura.

"It was, in the next place, clearly shown by Goodwyn, in one of the most beautiful specimens of physiological inquiry in any language, that in suspended respiration, it is the left side of the heart which first ceases to contract, the right side still continuing its function for several minutes, until the supply of blood may be supposed to fail.

"The facts detailed by Harvey had shown that the left side of the heart was endued with less irritability than the right; the experiment of Hook, that respiration restored the action of the heart, if it had previously ceased; that of Goodwyn, that this cessation and restoration of functions were observed in the left side of the heart. It was obvious, on the other hand, that the respiration belongs, as it were, to the left side of the heart.

"It appears plainly deducible from these facts, that in circumstances and structures

the most similar, the respiration is accurately inversely as the irritability."

In illustration of the excito-motory phenomena, and the dependence of muscular irritability on the integrity of the nerves distributed to the part under observation, Dr. Hall details the results of experiments made upon six frogs:—

"I divided the spinal marrow immediately below the origin of the brachial plexus; and I removed a portion of the ischiatic nerve of the right posterior extremity. I had immediately, or more remotely, the following interesting phenomena:—

"1st. The anterior extremities alone were moved spontaneously; both posterior extremities remaining entirely motionless, when the animal, placed on his back, made ineffectual efforts to turn on the abdomen.

"2nd. Although perfectly paralytic in regard to spontaneous motion, the left posterior extremity, that still in connection with the spinal marrow, moved very energetically when stimulated by pinching the toes with the forceps.

"3rd. The right posterior extremity, or that of which the ischiatic nerve was divided, was entirely paralytic, both in reference to spontaneous and excited motions.

"4th. After the lapse of several weeks, whilst the muscular irritability of the left posterior extremity was gradually augmented, that of the right was gradually diminished, phenomena observed when the animal was placed in water, through which a slight galvanic shock was passed accurately in the direction of the mesial plane.

"In this interesting experiment we have, then, first the phenomena of loss of spontaneous motion on removing the influence of the brain, the excited or reflex actions remaining; and the loss of these on removing the influence of the spinal marrow; secondly, in the case of mere cerebral paralysis, we have augmented irritability, and in that of the spinal marrow we have the gradual diminution of this property.

"5th. Strychnine being now administered, the anterior extremities and the left posterior extremity, or that still in connection with the spinal marrow, became affected with tetanus; but the right posterior extremity, or that severed from all nervous connection with the spinal marrow, remained perfectly flaccid.

"6th. Lastly, the difference in the degree of irritability in the muscular fibre of the two limbs was observed when these were entirely separated from the rest of the animal.

"In a word, the muscles of the limb, paralysed by its separation from both cerebrum and spinal marrow, had lost their irritability, whilst those of the limb separated from its connection with the cerebrum only, but left in connection with the spinal marrow, not only retained their irritability, but probably possessed it in an augmented degree. The next question came to be,—Do these phenomena obtain in the human frame? I visited a patient affected with hemiplegia, including paralysis of the face, and I passed a slight galvanic shock through two pieces of metal, of which one was placed over each cheek. The muscles of the paralytic side were most affected. I repeated the experiment with the same result. I now compared with these, two cases of injury of the facial nerve, passing the galvanic shock in the same manner, through the fibres of the orbicularis; it was now the muscle of the healthy side which was affected by the galvanism, the eyelid of that side being closed, whilst that of the paralytic side gaped as before. I next compared the effect of galvanism in two cases of complete paralysis of the arm; one hemiplegic, the other, the result of dislocation of the shoulder. The muscles of the former were more, those of the latter, less irritable than those of the healthy arm respectively, as were also those of the arm of a patient affected with the paralysis induced by lead. Lastly, I compared the cases of paralysis of the lower extremities, one arising after pertussis, and, therefore, cerebral; the other, I think, from disease within the lumbar vertebræ: in the former there was augmented, in the latter, diminished irritability."

With these extracts we shall close for the present our notice of this part of the "Cyclopædia of Anatomy and Physiology;" but we shall, on an early occasion, return to it again for the purpose of reviewing the three remaining articles, more especially that on the abnormal anatomy of the knee-joint, a duty to which we feel incited by an acquaintance with the excellent article on the hip-joint already penned by Mr. Adams in this work.

We need scarcely say, that every member of our profession who is desirous of moving with the progress of medical knowledge should be a subscriber to this work, for we feel convinced that there exist but very few, so little interested in our noble profession, as not to be possessors long before this of the valuable scientific library contained within its pages. For our own part, if we wished for a means of estimating a man's taste for his profession, we would ask, does this Cyclopædia grace his book-shelves; and in visiting a brother in the profession to whom we were entire strangers, we should anticipate the proximity of a refined and well-informed mind in observing this Cyclopædia on his library table.

UNIVERSITY COLLEGE HOSPITAL.

MELANOTIC TUMOUR OVER THE PAROTID GLAND.

H. D., aged 40, was admitted July 8, under Mr. Liston. She has had a small mole or mark on the left cheek since birth. It began to increase about two years ago, and to become black and discoloured. It increased in size, at first slowly, but afterwards more rapidly. It did not give her any pain. On presenting herself at the hospital there is found to be a large tumour, of a black colour, and somewhat elastic, situated over the parotid gland. The tumour is rough externally, moveable, and apparently not deeply attached. Mr. Liston considered it a simple melanotic tumour of the skin, and recommended its removal.

10. To-day the tumour was removed in the following manner:—An elliptical incision was made in the skin on each side of the swelling, which, with the skin, was removed. The tumour did not extend beyond the subcutaneous cellular tissue, where it was inclosed in a cyst. No attempts were made to bring the wound together. Cold water was applied for two or three hours, and then warm-water dressing. No irritation followed the operation, and in a few days the woman was discharged well.

ABSCESS OF THE PROSTATE—RETENTION OF URINE.

C. A., aged 48, was admitted May 6. About a year ago he suffered much from obstinate constipation, which caused great uneasiness. He began to make water very frequently, and the urine deposited a ropy mucus. He felt an uneasy sensation in the perinæum. These symptoms continued for some months, the desire to make water becoming more frequent, and the stream of urine, when voided, becoming gradually diminished in volume. There was also pain and smarting during micturition. About a month ago, some swelling was perceptible in the perinæum. This swelling and the difficulty of passing water increased until a week before his admission into the hospital; he then had complete retention of urine. A catheter was introduced for two days, at the end of which time a quantity of pus came from the urethra, but the retention still continued. On admission, he had retention of urine, requiring his water to be drawn off twice a-day. The urine deposits a quantity of mucus and purulent-looking matter. He passes his motions involuntarily. Leeches were applied to the perinæum, and he took a mixture containing nitrate of potash and tincture of henbane.

9. He has complete retention of urine; the house-surgeon not being able to introduce the catheter.

10. The retention has continued for thirty-six hours. Mr. Liston passed the catheter to-day, and had it retained in the urethra.

11. The catheter is still retained. He is better, but still passes his motions involuntarily.

12. Catheter still retained. He thinks he has more power in retaining his urine.

13. Catheter still retained; he feels a little better, but complains of much pain in the perinæum. This part is tender on pressure, though no swelling can be perceived. He says he feels a kind of thrill in the perinæum when he makes water, as if the urine were passing into the tissue.

15. The catheter is removed to-day; he cannot pass all his water, but begins to have a little more power over the bladder.

16. The catheter is introduced once a-day, as he has not sufficient power to empty the bladder quite. There appears to be a little valve at the prostatic portion of the urethra, formed by the opening of the abscess in the prostate. He is taking the pariera brava.

20. Much improved. He can retain his water several hours, and passes it nearly all at a time. There is very little pain during micturition, and he can now retain and pass his fæces quite naturally.

28. Better. His general health is much improved, and he is stronger. He passes his water pretty well. There does not appear to be much discharge from the abscess in the prostate.

June 8. Going on well, but still complains of a little pain in the situation of the prostate. The catheter has been occasionally introduced; it passes without much difficulty.

10. He is now pretty well. To attend as an out-patient to have the catheter passed once or twice.

THE DIVISIONS AND CONDITION OF THE MEDICAL PROFESSION IN DUBLIN.

To the Editor of THE LANCET.

SIR:—The uniform impartiality of your Journal, and the freedom with which its pages have been opened to the discussion of "Dublin Medical Politics," encourages me to offer you some observations upon that interesting subject, not for the purpose of discussing the question of Medical Reform, nor to disprove or to advocate its necessity; nor yet to create a useless warfare, by holding up to view the delinquencies of individuals; but simply to give you a history of passing events,—to trace the causes which influence the movements of parties,—and to divest Reform of much of the tinsel decorations by which certain devotees testify their veneration for their tutelary deity.

You have heard much of Reformers and Anti-Reformers—Medical Tories and Radicals—Medical Reform Associations and Anti-Reform Clubs—and of Medical Unionists and Repealers of the Union—in fact, of every title which could designate the extent or violence of party spirit, but none of which express more than that general uneasiness which indicates a desire, on the part of medical men in power, to alter their position, without being able, exactly, to agree upon the improvement they wish for.

Medical Reform is a question which has few real opponents, because there are few who do not feel that the medical profession is sinking fast in public estimation; that the present system is essentially bad, and that it cannot long resist the shocks produced by the collisions of every jarring interest which forms its machinery. Reform is on the lips of every one, and yet so far is an unanimous opinion as to its necessity from producing a consentaneous effort to carry it into effect, that at no period, in the memory of the oldest member of the profession, has Dublin been the scene of more violent conflicts, or has there been more dissension than what has sprung up upon a question in which there seemed to be so little difference of opinion. Why is this? Why is it that union in theory, is only practical discord? Why is it that every effort to improve our condition, only sinks us lower in the mire? Why is it that Mr. Warburton has been so cautious in grappling with a question which he took up with so much zeal, in which he displayed so much penetration in detecting existing abuses, in which the extent of his information proved his perfect competency for the task? Why is it that, after six years' expectancy, we are left, still tossing to and fro, on an ocean of discontent, blown about by every wind of doctrine, and left at the mercy of every false light which it may suit the objects of interested parties to set up?

The answer to these queries would require a volume. To unravel all the difficulties of the subject, and to reduce to order the facts bearing upon it,—to form an epitome of the mass of contradictory evidence already accumulated,—would be, after all, a tedious and intricate digest, which even if it were possible to produce would be a trespass upon your indulgence and the reader's attention, that the little conclusive testimony obtained would never recompense. I shall, therefore, leave the question of Reform precisely where it is, confident that Mr. Warburton's acute and comprehensive mind will enable him, at length, to effect much more real benefit to the profession, than any assistance he can receive from the suggestions and lucubrations of its numerous and, some of them, most clamorous advocates. My purpose is not with Reform, but with Reformers; not so much with principles as practices; rather to correct misstatements than to disprove theories; and, if we can, expose the licence which is taken with the name Reform, if the veil be but drawn from mysteries which its professed worshippers enact in honour of their divinity; if we can place before you facts as they are, not as they are said to be, some false glosses may be removed which at present disfigure the question, and the purposes of truth and the cause of Reform be equally served.

To understand the state of parties and Reform, in the Dublin acceptation of the word, some brief history of the profession is required.

You are, no doubt, already aware, that in this city the practice of the medical profession, from time immemorial, has been conducted on a principle different from that which obtains in England.

We have here, strictly speaking, no such person as the *General Practitioner*, but rather, as is the case at present on the Continent, so in former times the distinction between the physician, surgeon, and apothecary, was accurately observed. The physician would not perform the simplest operation in surgery; the surgeon did not venture on the treatment of a purely medical case; and the apothecary did not infringe (at least openly) on the province of either.

At this period Medicine held up her head, and walked with an equally dignified step with her sable sisters, and medical men were silent, because they were satisfied.

But this golden age has long passed away; the profession has since undergone a series of imperceptible transitions, which has brought us down to the baser metal, and we may now be said, in every sense of the word, to be in an age of *brass*.

The causes of these changes may be easily explained. The boundary which marked the province of each of these classes gradually became a kind of debatable land: the surgeon found that he could not practise his branch with security, unless more attention was paid to a knowledge of medicine; why, therefore, not practise what he knew? And, having the advantage over the physician, in being able to give ocular demonstration of his ability, his reputation increased, depredations on the neighbouring territory were daily committed, until at length the mask was thrown aside,—Medicine and Surgery were declared to be the same profession, and the star of surgery rose in the ascendant.

Still, however, some badges of inferiority were, for many reasons, retained. The surgeon took apprentices, which the physician did not; and as the College of Surgeons rose to the highest character, and its licence became the great object of attraction to the medical student, the only means of obtaining it being by apprenticeship. This apparent blot became a vast advantage in supplying "the ways and means" for carrying

on the war. The apprentice fees were no very inefficient aid in hastening the independence of the surgeon, and as they were large, and the number unlimited, the fortunes realised were in proportion. As the physician before, so the surgeon now, possessed the wealth, and of course maintained the *status* of the profession.

The physician was, to a certain extent, shorn of his dignities, and a mode of warfare taught which the surgeon was soon to find directed against himself, by the third and hitherto neutral party.

The apothecary was always allowed to see and to treat minor cases, just such as would not authorise him to require the family in which he attended (who looked upon him as a kind of friendly adviser) to pay five or six pounds in fees to have cured, and in such humble capacity he would probably yet have remained, but that Intellect was, most unfortunately, on her march. He was seized with the mania of the times, such limited knowledge did not suit him, he did not like to be an idle spectator of a practice he was permitted to witness, often had explained to him, and which it might be necessary for him, on an emergency, to follow up; his attention was, therefore, directed to medicine and surgery, which he studied in a way which gave him very little trouble, and was quite as useful to him as the more legitimate course. In place of walking the rounds of an hospital, he went the round of his patients, upon each of which he received a kind of clinical lecture, perceived the application of the newest and most useful remedies, and had his mind stored with a conspectus of the best-selected prescriptions.

Thus, while the noviciate-surgeon, greatly his superior in anatomy, physiology, and the theories of his profession, and well acquainted with disease, was often limited, in his practice, to simples, the apothecary, without any theory, could adopt the most approved treatment, if he would venture on a little empiricism. He was generally called upon to bleed, perhaps to cup, and sometimes even to open the temporal artery. A knowledge of anatomy was required, because the surgeon pleased to make him a kind of deputy, and steps were immediately taken to remove the only difficulty which lay in his way. The same question occurred to him as to the surgeon before. Why not practise what he knew? Education was more attended to, degrees in medicine and surgery sought for, which, as the Colleges of Physicians and Surgeons in Dublin were closed against him, were of necessity obtained from the sister kingdom; and, armed with these testimonials of competency, he became less scrupulous in undertaking the treatment of whatever came within his reach.

The power of securing qualifications in medicine and surgery, independently of the national colleges, gave a new stimulus to medical instruction; schools began to increase, and a new class of practitioners to spring up, different from any hitherto known, formed by a combination of the three already in existence, but having no exact resemblance to any of them. General practitioners, so far as being qualified to practise all branches of the profession, and supplying medicine to their own patients, but differing in still retaining so much of the former apothecary as to keep open shop for the retail of medicines, and compounding such prescriptions as would be sent to them.

The appearance of this new and increasing class did not diminish the number of regularly-educated surgeons; on the contrary, they also were in an increasing ratio. So long as the apprenticeship system was in force, the required fee acted as a certain check upon the number of candidates, but the restriction was no longer retained. The College of Surgeons was opened to two classes of pupils, apprenticed and non-apprenticed; the latter being required to pay to the College and in fees for his education some equivalent for the apprentice-fee. According to this arrangement, though apparently the same, a result very fatal to the surgeon was the consequence.

Formerly the apprentice was assumed to be completely under the instruction of his master, no certificates for lectures or for attendance upon hospital was required, the examination alone was to be the test of his competency, but it was conducted with the utmost strictness, the candidate being examined for an hour by three examiners upon anatomy and physiology, and a second day by three others for the same time in surgery and therapeutics. He was examined in the presence of the licentiates of the College, and a publicity given to the whole proceeding, which made it an ordeal of no ordinary kind. Although no certificates were required, still they were generally presented as a proof of diligence, for which the apprentice paid, in addition to his fee. These certificates were afterwards demanded of him by the College; but in making the new arrangement alluded to, the College assumed that the master paid for them out of the fee received, and therefore required the non-apprentice to pay to the College for his licence an equivalent equal to the difference —in other words, the College was given, in one instance, what the master was supposed to put in his pocket, over and above all expenses, in the other.

But inasmuch as the master formerly paid for nothing, and all the apprentice gained in this way was the certificate for hospital attendance, this pleasing fiction of the College gave the non-apprentice the advantage, the fees he paid for hospital attendance and for his licence not being equal to the fee required for an apprentice.

Notwithstanding, however, this disparity,

the object of throwing open the College was not accomplished, pupils were already taught that licences were to be obtained elsewhere much cheaper, and to all appearance fully as useful, if not more so. The current was not thus directed, a reduction of the licence-fee was called for, and ultimately both classes were placed on the same footing by the College. It is needless to add, that the number of apprentices gradually diminished, and are fast disappearing from the field.

In the majority of instances, therefore, the surgeon had again to depend on the income derived from practice alone, and had not only to contend against the disadvantage of increasing numbers in his profession, but had also in his new competitor a rival of a very dangerous description. The new proprietor of "a medical establishment" had not only the profits of his shop as an extra support, but also had the advantage of no third party interfering between him and his case, to say nothing of having the appearance at least of suiting a more economical tendency in the public taste.

In none of these was the surgeon his match, and therefore was compelled to call up resources, which should have been left in reserve. The march of intellect enabled him to direct his attention more to instruction. Being well educated, and having the examinations of the College open to him, two sources of income were drawn upon, which before were left to a few, viz., private instruction and public lectures. To attract new pupils, and to add to the increasing number of practitioners, became an object of personal interest. New schools were annually springing into existence. Lecturers and *grinders* were more numerous; those energies which should have been devoted to improvements in practice were consumed in the dry routine of elementary tuition; and a brood of unfledged pupils fed upon the life-blood which Surgery gave to support her new-formed offspring.

In addition to these means of drawing away the surgeon's attention from his position as a practitioner, and making him negligent of the public, his rival seemed to offer them the cheaper article, and was much more busy in presenting it. The grinder could not leave his class, nor the lecturer his theatre, without receiving the customary remuneration. It was much more convenient to send to one not quite so much occupied, and, of course, less expensive; thus, the surgeon was, in a great degree, forgotten by the public, or only remembered as essential in cases of difficulty or danger.

All these causes have conspired to exclude the surgeon from practice, some of which may be fairly attributed to those inducements improperly held out to facilitate admissions into his profession, and much to the opposition between his interest as a teacher and as a practitioner.

From this slight review the gradual change can be observed, and, perhaps, the causes traced, of a decline in the profession. Those boundaries which preserved the independence of each section have been lost sight of, and the aggressive spirit, which seemed successively to give them a superiority, has been the principal cause of the reverse. The tendency of circumstances has been to increase the supply of practitioners beyond the demand, and, consequently, to diminish the amount of remuneration; and all have combined to call into existence a new description of practitioner as yet undefined, but upon the future character of which will depend, in a great degree, that of the profession. The general practitioner seems at present to oscillate between the trade of pharmacy and the profession of medicine, between the support derived from the profits of the shop and that resulting from practice on a cheaper principle. If the former preponderate, there will be little inducement to study the profession for character sake, or as a scientific pursuit; if the latter, to what extent the economical practice may descend is questionable. At present, the higher orders of medical men, from a long enjoyment of fair weather, are becoming uneasy, from the appearance of clouds on the horizon; the medical barometer is cheapening down to a point which is sure to indicate storm, and it will require a master-mind to preserve it free from its effects. If Mr. Warburton prove himself such, he will add one more and yet higher claim upon its lasting gratitude, but less than Mr. W. cannot accomplish it. The different plans proposed are too partial to satisfy all the interests concerned in the question, but have been quite sufficient to split the profession into conflicting parties; and the agitation has raised a scum to the surface, which it were better had it never been disturbed. A review of the parties into which the profession is divided will be the subject of a future communication, if I have not trespassed too much on your present indulgence to receive a similar favour. I am, Sir, your obedient servant,

MEDICUS.

Dublin, August 15, 1840.

THE writer of the preceding article, on the present state and views of the Medical Profession in Dublin, has had extensive opportunities of acquiring a knowledge of the facts which he portrays in his letter,—the first of four epistles which he has handed to us, with a personal authentication, for publication in THE LANCET. Our correspon-

dent considering, first, that the members of the profession in England and Scotland do not understand the condition and wants of their brethren in Ireland; and, secondly, that he cannot reach the medical practitioners of Ireland, universally, through any other channel than THE LANCET. As he has pressed into his service a great mass of facts bearing on the question, and expresses on them, as he considers, the opinions of a very respectable, if not a very numerous constituency, he is readily awarded in our pages the office of public representative of his party. Other and very able representatives of the same party in Ireland have often spoken to the profession in THE LANCET. We cannot, consistently with our space, accommodate them all; but the sedateness and moderation which characterises the tone of "MEDICUS," secure to him, on the present occasion, the place that he desires to fill.

Our readers will see at once that he is not a friend of MEDICAL REFORM,—words which, without abusing language, can have but one meaning attached to them. He talks at the onset of "the tinsel of Reform." There may be tinsel around a fright to make her beautiful; or tinsel in a letter to hide the errors of the writer; but there is no tinsel about wisdom, or virtue, or fine sculpture, or, if there be some, its removal does not expose corruption or deformity. Had he a better opinion of Medical Reform, he would not use the cant words of the monopolists in speaking thereof. These are the tinsel which we shall strip from his letters as he proceeds. But in commenting upon them, we do not mean to defend some of the opinions which "MEDICUS" attacks,—or the views of any section of the profession in Dublin,—a city which contains an abundant number of gentlemen who are most sincerely anxious for a Reform in the education and government of the Profession. Our remarks will be confined to showing the proper bearing of the facts which he quotes, and the opinions which they *ought* to create among those who profess a desire to have the best laws for regulating *admissions into the profession*, and the *government of the admitted*, for THESE (involving the veto against *unlicensed practitioners*, and the rightful administration of *medical charities*,) are the rightful TEXTS of Medical Reformers. How simple are the questions which "MEDICUS," and every other writer on the subject, has to discuss; and yet what a confusion may be made of the debate by allowing those texts to be mixed up with others drawn from volumes in which are written the petty interests of individuals, who have this, that, and the other private purposes to serve, in their desire either to keep things as they are, or to change them for something of a more personally aggrandizing character! First, the PUBLIC WELFARE; and, secondly, the JUST PRIVILEGES OF THE WHOLE PROFESSION, in return for their public services,—these are the points of consideration in legislating for the public health. Keep strictly to these, with a total abandonment of all feelings of private interest, and the adoption of common sense for a guide in framing the details, and the proper elements of discussion and legislation are obtained.

THE following circular was this week issued in the parish of St. Pancras, Middlesex; the circumstances to which it relates were mentioned by us last Saturday:—

"Sir:—You are requested to meet the rest of the Directors of the Poor of this Parish, at St. Pancras Workhouse, on Tuesday next, the 18th day of August instant, at ten o'clock in the forenoon, pursuant to a requisition by three Directors, to consider the rescinding of the Resolution of the last Meeting, by which the remuneration for successfully vaccinating each person, under the 'Vaccination Act,' is limited to one shilling and sixpence; also to consider the propriety of fixing a less objectionable sum, for the better carrying into effect the provisions of the said Act. I am, Sir, your most obedient servant,

"JOHN MCGAHEY, Clerk.

"St. Pancras, August 15, 1840."

The meeting has since been held, when the two-shilling vote was lost by a majority of 3, having 7 for and 10 against the measure; the sum being now established at 1s 6d per case. And who, think our readers, was

the chief opponent of the larger sum? Why, a paltry barber-surgeon, named COOPER,—THOMAS HENRY COOPER, who had the impudence to say, that it was "all very well for "THE LANCET to wish the medical practi-"tioners to have a larger remuneration, be-"cause it was the organ of the profession, "but *he* thought 1s 6d enough,"—enough, no doubt, for such a vaccinator as he, since he has thus estimated his own competency. The seconder of the motion gave as a reason for his bias, that there were in St. Pancras 123,000 *children* unvaccinated! As THOMAS HENRY COOPER has made himself a public character, cannot some gentleman in St. Pancras give us his history? It may be worth perusing.

PRIZE-MEDALS AT THE MANCHESTER SCHOOL.

To the Editor of THE LANCET.

SIR:—Your anonymous correspondent who signs himself "Fiat Justitia," is in error when he states, in reference to the Pine-street School, Manchester, that for several years past it has been advertised that the session should be wound up with a distribution of medals, but that the promise has not been performed. As the names of the successful competitors are unknown until the last day of the session, and as the medals cannot on that account have been previously engraved, their immediate distribution would be impossible. But they are adjudicated on that day, and presented as soon as engraved; and when more than the delay required for the due preparation of the medals has in any case occurred, in all probability it has been unavoidable, generally from the student himself having left the town without making the necessary application, or leaving his address. I have reason to know that at this moment there are four gentlemen to whom medals are due, but who, on this account, have not yet received them. Having been until 1838, "for several years past," a pupil of the Pine-street School, I had an opportunity of knowing all the medallists of my time, and can assert, that so far from annoying, by needless procrastination, the lecturers invariably evinced the greatest readiness to promote the interests, and add to the gratification of their respective classes. To what motive your correspondent attributes the fancied backwardness in presenting the medals, I am at a loss to imagine. That there has been no want of liberality towards the students, is proved by the circumstance which has happened several times to my knowledge in the classes of Mr. Turner and Dr. J. L. Bardsley; namely, that when two of the candidates have been found, in the required examinations, of equal merit, instead of both undergoing an additional examination, a medal has, in every instance, been awarded to each. Until this accusation, therefore, be authenticated by name, I must be permitted to disbelieve its truth. I am, Sir, your obedient servant,

CHARLES R. HALL.

Manchester Royal Infirmary,
August 11, 1840.

*** The names and address must be attached to any additional allegations on this subject.

To the Editor of THE LANCET.

SIR:—In reference to a notice in your last week's Journal, imputing to one or more of the lecturers of the Pine-street School, a gross dereliction of duty in the non-fulfilment of promises to students, I beg to state, that there was, *from circumstances over which the lecturers had no control*, much delay in the *execution* of the medals for Session 1838 and 39, but I know no reason why they were not duly presented to the respective prize-men at every antecedent period. If your correspondent will address to me a note, stating the ground of his complaint, I will take care that the grievance shall be redressed; for I feel persuaded that no teacher can be so dishonest and so cruel as to withhold from a student the reward due to his merit, and from a parent so gratifying a token of his son's assiduity and good conduct. I am, Sir, your obedient servant,

THOMAS TURNER.

Mosley-street, Manchester,
August 10, 1840.

TO CORRESPONDENTS.

The correspondent at D., who never gives us the opportunity of answering him privately, forgets that our space is continually forestalled by matter to which some other,—especially controversial, that brings in its tail a double of the original,—must often give place. In that respect our pages have stood, as yet, regarding his own letters.

X. Y. Z. should ask some chemist in Liverpool. It is not a part of our duty to supply such information as he desires.

A General Practitioner.—Ques. 1. The coroner was not required by law to bind over both witnesses, if he presumed (on the opinion of the jury or otherwise) that the evidence of one would be sufficient. Whether the physician was competent to give an opinion on the facts, we know not.—Ques. 2. Each surgeon was entitled to the fee of two guineas, if each respectively received the official summons which the law has described in the Medical Witnesses' Act.

Showing the No. of Deaths from all Causes, Registered in the 5 Weeks, ending Saturday, Aug. 8, 1840.

Causes of Death.	July. 5 to 11	12 to 18	19 to 25	26 to Aug 1	Aug 2 to 8	Weekly Av. 1838, (corrected.)
Small-Pox	11	13	21	17	18	76
Measles	20	22	29	34	24	12
Scarlatina	49	41	32	38	35	30
Hooping-Cough	16	19	16	17	19	42
Croup	7	6	2	9	12	7
Thrush	7	2	9	10	8	6
Diarrhœa	9	11	11	14	14	8
Dysentery	....	3	2	3	2	2
Cholera	2	....	3	2	4	.3
Influenza	1	1	1	2	3	1
Typhus	19	27	21	14	17	82
Erysipelas	6	12	10	8	8	8
Syphilis	....	....	1	....	....	1
Hydrophobia	....	....	....	....	....	.2
TOTAL	138	157	158	168	164	276
Cephalitis	8	16	9	9	13	11
Hydrocephalus	27	44	36	27	38	35
Apoplexy	12	15	14	15	9	20
Paralysis	29	16	15	14	13	15
Convulsions	51	74	55	76	73	68
Epilepsy	4	5	4	2	6	4
Insanity	....	1	3	....	1	1
Delirium Tremens	1	2	....	2	1	1
Dis. of Brain, &c.	7	6	11	5	9	6
TOTAL	139	179	147	150	163	161
Quinsey	1	2	1	1	....	2
Bronchitis	2	10	11	7	3	9
Pleurisy	1	1	4	1	3	2
Pneumonia	62	45	49	51	51	74
Hydrothorax	6	9	6	3	1	6
Asthma	10	15	9	9	5	29
Consumption	144	142	135	146	144	152
Dis. of Lungs, &c.	14	4	11	6	13	11
TOTAL	240	228	226	224	220	285
Pericarditis	....	1	2	....	1	.3
Aneurism	....	1	1	1	1	.
Dis. of Heart, &c.	18	20	20	16	12	15
TOTAL	18	22	23	17	14	16
Teething	29	24	29	26	21	15
Gastri.—Enteritis	17	23	25	19	28	18
Peritonitis	....	1	....	3	....	1
Tabes Mesenterica	3	5	6	8	6	3
Ascites	1	1	1	2	....	.3
Ulceration	....	2	3	1	2	1
Hernia	3	....	2	2	....	2
Colic or Ileus	1	2	1	....	2	4
Dis. of Stomach	11	8	5	15	5	4
Hepatitis	3	1	....	....	2	1
Jaundice	....	3	4	1	5	2
Dis. of Liver, &c.	8	8	9	7	16	8
TOTAL	76	80	83	84	86	59
Nephritis	....	1	....	1	1	.5
Diabetes	....	....	....	....	....	.4
Stone	....	....	1	1	....	.4
Stricture	....	....	....	....	1	.6
Dis. Kidneys, &c.	7	2	2	3	6	3
TOTAL	7	3	3	5	8	5

Causes of Death.	July. 5 to 11	12 to 18	19 to 25	26 to Aug 1	Aug 2 to 8	Weekly Av. 1838, (corrected.)
Childbed	9	5	7	5	8	8
Ovarian Dropsy	....	....	2	....	....	.3
Dis. of Uterus, &c.	3	2	4	3	....	2
TOTAL	12	7	13	8	8	11
Rheumatism	1	4	2	3	1	4
Dis. of Joints, &c.	5	2	4	3	....	4
TOTAL	6	6	6	6	1	8
Ulcer	2	....	....	1	1	.4
Fistula	....	....	....	....	1	.4
Dis. of Skin, &c.	1	....	....	....	3	.4
TOTAL	3	....	....	1	4	1
Inflammation	4	7	5	9	4	19
Hæmorrhage	12	3	1	4	2	4
Dropsy	27	32	29	37	39	35
Abscess	2	4	2	1	6	4
Mortification	5	7	5	6	2	4
Scrofula	4	5	1	3	2	1
Carcinoma	8	7	10	9	4	6
Tumour	9	2	4	2	1	1
Gout	....	1	1	....	....	1
Atrophy	2	4	9	7	11	4
Debility	23	11	23	26	20	12
Malformations	1	....	....	2	....	1
Sudden Deaths	16	11	12	4	8	13
TOTAL	113	94	102	110	90	105
Old Age	61	64	61	42	57	82
Intemperance	....	....	....	2	....	.4
Privation	1	....	....	....	....	.6
Violent Deaths	24	25	27	11	18	27
TOTAL	25	25	27	13	18	28
Causes not Spec.	2	2	....	1	3	13
Deaths, all Causes	840	867	851	829	848	1051
No. of Week	27	28	29	30	31	....

1840.	Ages. 0 to 15	15 to 60	60 & upwards
July 5th to 11th	387	282	169
„ 12th to 18th	420	288	159
„ 19th to 25th	396	304	149
„ 26th to Aug. 1	448	250	130
„ Aug. 2nd to 8th	452	264	131
Weekly Average, 1838	484	365	199

	Estimated Pop. 1840.	July 5 to 11.	July 12 to 18.	July 19 to 25.	July 26 to Aug. 1	Aug. 2 to 8.	Weekly Av. 1838.
West Districts	308,921	123	132	115	124	146	169
North Districts	414,458	169	172	171	157	157	183
Central Districts	309,722	172	182	156	181	157	208
East Districts	411,634	151	182	197	154	205	249
South Districts	450,265	215	199	212	213	183	249
	1,935,000	840	867	851	829	848	1,051